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ABSTRACT

A study which was the collaborative effort of 23 centers in 11 countries and which was carried out between 1976 and 1985, identified and described the needs of persons for nursing care and the objectives, nursing interventions, and outcomes related to those needs. The study involved three phases which covered two programming cycles in WHO and two crucial developments, the Alma-Ata Declaration and the acceptance by the WHO European Region of the regional targets in support of regional strategy for health for all by the year 2000. It also established a database for the two sample groups: 707 elderly men and women aged 65 years and older and a surgical group of 447 men and women between the ages of 15 and 65. The study demonstrated that reporting agreed upon between the nurse and the person is a viable and productive way of assessing health status and carrying out care. It also demonstrated that it is possible to identify the priority the nurse gives for action. Written objectives of care for the patients/clients could be established through the use of a standard nursing care plan and the objectives could be coded and computerized for analysis. Planned interventions could be recorded in writing, coded, and computerized by means of the standard nursing care plan. The categories of nursing interventions undertaken needed further study to enable relationships between planning and resource allocation to be investigated. The interventions identified appeared to be appropriate for both groups. Furthermore, the needs identified enhanced the validity of the nursing care plan as they were consistent with the diagnosis on admission. The scores achieved in the evaluation section of the nursing care plan during the training phase indicated that further preparation of nurses is required. (YLB)

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The World Health Organization is a specialized agency of the United Nations with primary responsibility for international health matters and public health. Through this Organization, which was created in 1948, the health professions of some 160 countries exchange their knowledge and experience with the aim of making possible the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life.

The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health problems of the countries it serves. The European Region has 32 active Member States,[*] and is unique in that a large proportion of them are industrialized countries with highly advanced medical services. The European programme therefore differs from those of other regions in concentrating on the problems associated with industrial society. In its strategy for attaining the goal of "health for all by the year 2000" the Regional Office is arranging its activities in three main areas: promotion of lifestyles conducive to health; reduction of preventable conditions; and provision of care that is adequate, accessible and acceptable to all.

The Region is also characterized by the large number of languages spoken by its peoples, and the resulting difficulties in disseminating information to all who may need it. The Regional Office publishes in four languages — English, French, German and Russian — and applications for rights of translation into other languages are most welcome.

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[*] Albania, Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Finland, France, German Democratic Republic, Federal Republic of Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Spain, Sweden, Switzerland, Turkey, USSR, United Kingdom and Yugoslavia.

Nursing care

Summary of a European study

Cover design: G. Guðmundsson

World Health Organization
Regional Office for Europe
Copenhagen

Nursing care

Summary of a European study

A study of people's needs for nursing care and of the planning, implementation and evaluation of care provided by nurses in two selected groups of people in the European Region

Pat Ashworth, England
Agnes Bjørn, Denmark
Geneviève Déchanoz, France
Nicole Delmotte, Belgium
Elisabeth Farmer, Scotland
Anna Bulanda Kordas, Poland
Elsa Kristiansen, Norway
Helen Kyriakidou, Greece
Majda Slajmer-Japelj, Yugoslavia
Maija Sorvettula, Finland
Marta Stankova, Czechoslovakia

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Preface

This is a brief account of a report on the results of a European study on people and their needs for nursing care.[a] The study was a collaborative effort of 23 centres in 11 countries carried out between 1976 and 1985. The basic premise of the study was that the care of people must be based not on intuition but on sound scientific principles. It also emphasized the participation of people in decisions about their care and used data collection instruments that ensured that participation would occur.

The three phases of the study covered two programming cycles in WHO and two crucial developments that occurred while the study was in progress, namely, the Alma-Ata Declaration and the acceptance by the WHO European Region of the regional targets in support of the regional strategy for health for all by the year 2000.

The educational preparation of those involved is described, along with details of the approaches used and the methods developed to transfer data from an interview with a patient or client in coded form for computer use and analysis.

The data came from 1154 people in two sample groups: a group of 707 elderly men and women aged 65 years and over and a surgical group of 447 men and women between the ages of 15 and 65. The way in which needs and objectives were identified, met and evaluated is described in terms of a decision-making framework, the nursing process.

This shortened version of the report presents the major aspects of the study, the framework within which it evolved, selected aspects of the development phase, the major findings and a brief analysis of the data. The conclusions and recommendations are presented in full as suggestions for future thought and action.

No attempt has been made to make this version comprehensive, and readers wishing more detailed information should consult the full report. In addition, copies of material prepared during the course of the study are available from the Nursing/Midwifery unit at the Regional Office in Copenhagen. This material comprises the two data collection instruments and the instructions and guidelines for their use, and also profiles of nursing in the eleven countries involved in the study.

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[a] The full report on the study, entitled *People's needs for nursing care*, has been published by the WHO Regional Office for Europe and is available through WHO sales agents at Sw.fr. 22.-.

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Introduction

The profound changes occurring in health care, the explosion of scientific knowledge, the development of highly specialized disciplines, the questions both providers and users of health services are asking about inequalities of care and the costs and outcomes of care — all these are a justification for this international study of nursing care. So is the situation underlying the WHO Constitution and WHO objectives and regional strategies: the gap that exists between what is needed by people to stay healthy and the resources available. Current practices need reassessment.

Although the study began before the Alma-Ata Conference, the Declaration of that Conference and the recently accepted WHO regional targets in support of the regional strategy for health for all *(1)* served to strengthen the need for the study. Efficient and effective use of nurses and nursing personnel requires a thorough analysis of nursing care through need-based approaches paying attention to the objectives and the way in which care is carried out.

The overall purpose of the study was to describe people's needs for nursing care, with nursing seen as a complex activity concerned with the whole person. It involved a shift from a disease-oriented view of nursing and the organization of health care to one of concern for the maintenance, promotion and protection of the person's health, caring for the sick and rehabilitation, with health, illness and dying, and with the physical, psychosomatic and psychosocial aspects of life *(2)*.

The WHO Regional Office for Europe formulated the four major objectives for its nursing/midwifery programme as: the nursing process; organization; education and continuing education; and resource planning *(2)*. The aims of the study, derived from those objectives, was to develop research expertise among nurses, increase knowledge about needs for nursing care, develop a network of centres to encourage communication, and promote the development of nursing as a discipline. At the international level, as far as is known, no similar collaborative study has been carried out on the caring process.

Nursing research in Europe has been supported by the International Council of Nurses, the Florence Nightingale International Foundation, the Northern Nurses Federation and the Workgroup of European Nurse Researchers.

Historically, nursing in Europe is as diversified as its Member States. Its history has been affected by economic, social and political factors, including action taken to unify nursing education. The International Council of Nurses has played an important role in the development of nursing in Europe and maintained important links with the EEC in relation to nursing issues. Early studies emphasized nursing as a series of tasks and as work that could be performed in substitution for that of other health service workers when they were absent. Until the early 1970s, the WHO nursing programme in Europe was mainly directed towards assisting countries to improve their nursing services and education. By 1974, the need for nursing research was sufficiently recognized and led to the study. A position paper by Hall *(2)* led to a change in WHO's attitude to nursing, viewed now as a person-centred caring process rather than as a series of tasks. It was in this changed context that the study developed.

Thus the aim of the study goes beyond analysis of the data. It is not only to provide information about nursing care but also to make a contribution to health through the development of nursing in Europe.

References

1. *Targets for health for all.* Copenhagen, WHO Regional Office for Europe, 1985.
2. **Hall, D.** *A position paper on nursing.* Copenhagen, WHO Regional Office for Europe, 1979 (unpublished document).

1

Development of the study

Organization and Management

This international study on nursing under the auspices of WHO is a response to a 1974 call for research-based knowledge about nursing. It was to use the nursing process[a] and include the assessment of needs for nursing care, planning for care, implementation of the plan of care and evaluation of the outcome.

Before the study was begun, active use of the nursing process was encouraged to achieve the shift from task-oriented to person-oriented care. A network was created to provide links between nurses in different countries, to encourage exchange of information and to support the process of change under way.

During the medium-term programme in nursing/midwifery in Europe between 1976 and 1983, the WHO Regional Office for Europe convened advisory and liaison groups where elements of the study were discussed in relation to other aspects of the programme. Other activities took place during the preparatory and development phases that eventually contributed to the study. A workbook was developed and advisory group meetings were held where key people were informed about the study and its major elements. One element was the nursing process, discussions on which eventually produced the definitions used subsequently throughout the study.

The first meeting concerned with the study took place in 1979, with representatives from nine countries. Six of those original countries eventually

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[a] The nursing process is defined in the definitions of terms prepared for the study as the systematic use of the problem-solving method directed towards the physical, psychological and social needs of the individual, family and/or community as opposed to the routine traditional approach based on assumptions of needs for nursing care. It is concerned with meeting those health needs of individuals, families and/or communities which can most effectively be met by nursing care. The nursing process includes planning to meet these needs, providing the care and evaluating the results.

The nurse, in collaboration with others, defines objectives, sets priorities, identifies care to be given and mobilizes resources. She provides the service either directly or indirectly and evaluates the outcome. Feedback from evaluation initiates desired changes in subsequent interventions. Thus, nursing becomes a dynamic process leading to adaptation and improvement.

took part in the study, together with five others. Subsequent meetings focused on teaching in nursing research and documentation in nursing practice.

Phases of the Study

There were three main phases: the preparatory phase (1976–1979); the development phase (1979–1982); and the implementation phase (1982–1985). These phases overlapped to some extent but followed the WHO medium-term programme as a whole (Fig. 1).

Fig. 1. Phases of the study

I. Preparatory phase	*II. Development phase*	*III. Implementation phase*
• Hall's position paper on nursing accepted	• Reorientation from task-centred to person-centred nursing	• Completion of pilot study
• Establishment of network	• Taxonomy of nursing terms developed	• Revisions of protocols and data collection instruments
• Orientation of ministries to need for nursing research	• Ongoing learning in research, computers, data analysis, coding protocols, instrument development, nursing process, data base	• Literature reviews completed
• Posts for national managers established	• Education of nurse data collectors	• Data collection completed
• Project approved	• Education of coders	• Data analysis initiated
• Establishment of Danish Institute for Health and Nursing Research	• Orientation of study centre personnel	• First drafts of report completed
	• Creation of computer program and cleaning program	• Data analysis completed on international data
	• Establishment of liaison between national computer centres, WHO and Danish Institute for Health and Nursing Research	• Data analysis on national level continued
	• Completion of first, second and third tests of instruments	• Final write-up of international data
		• Use of findings at national level as basis for future activities in — research — nursing services — education

Preparation phase

During the preparatory phase a network structure was created to support activities over the whole period of the study. A linked series of collaborating and participating centres was developed in the countries interested. By 1982 the centres involved consisted of 23 participating centres, which were part of research institutes, university departments of nursing, research hospitals, or other such research establishments.

Development phase

The second phase of the study involved the development of the study design and educational component. Throughout this four-year phase efforts were made at the centre level through classroom and clinical teaching.

Implementation phase

During the implementation phase data were collected, processed and analysed. The analysis took place at the international level for this report, within the 23 centres for use at those levels.

The Network of Collaborating Centres

Institutions[a] that possessed the necessary expertise and facilities were requested by WHO to fulfil certain functions related to the study; this request was made after consultation with the government. The final network consisted of 11 countries, 7 collaborating centres and 23 participating centres (Table 1 and Fig. 2).

The centres were expected to employ nurses willing and sufficiently proficient to work effectively on the development of instruments related to the nursing process and protocols for the study. A national coordinator for each country was appointed programme manager for the duration of the study.

The centres were expected to assist in the development of the study's framework, objectives, methods, tools and teaching materials. They were to use the teaching materials to train the staff who would be involved in the study, assist in the development of the network, attend meetings, translate the study documents into the national language, collect, process and assist in the evaluation of the data, and extend the centre development concept to others.

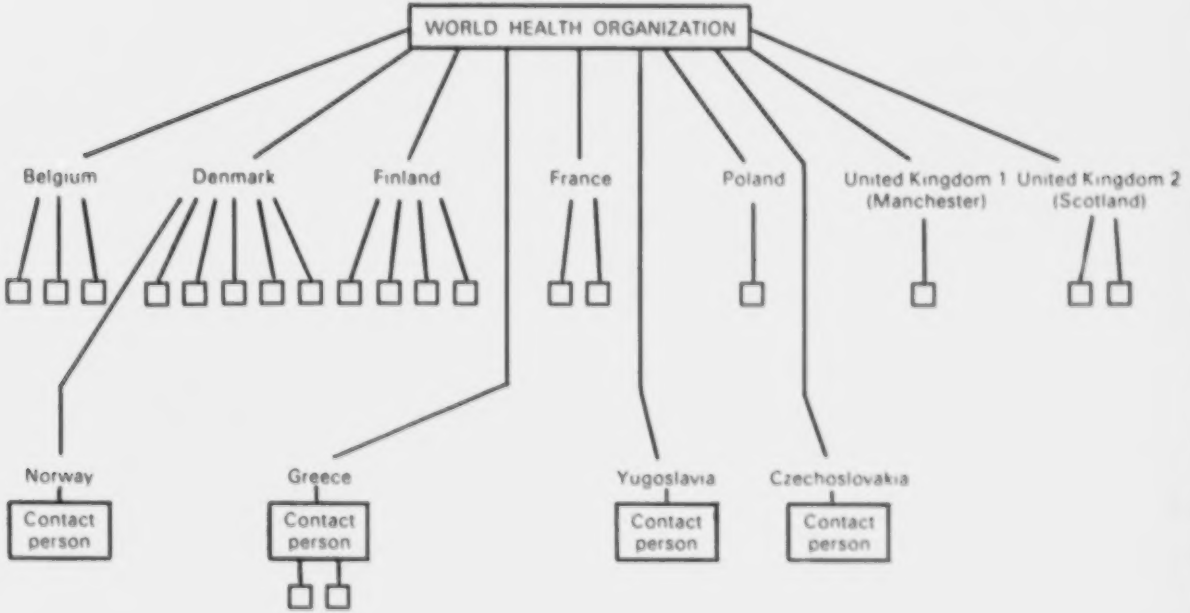
Three types of centre were designated according to their degree of participation in the study.

[a] The term "institution", as used in this context, applies to any institute, department or laboratory engaged in research, whether independently or as part of a larger establishment.

Table 1. Collaborating and participating centres

Country	Collaborating centre	Participating centre
Belgium	St Raphael's Hospital, Leuven	St Peter's Hospital, Leuven
		Cliniques universitaires Saint-Luc, Brussels
		Academisch Ziekenhuis, Antwerp
Czechoslovakia		Third Medical Clinic, Faculty of Medicine, Charles University, Prague
Denmark	Danish Institute for Health and Nursing Research	Aalborg Hospital
		Frederiksborg County Hospital
		Central Hospital, Herning
		Roskilde County Hospital
		The Old People's Town, Copenhagen
Finland	Nursing Research Institute	Helsinki City Health Centre
		Helsinki University Central Hospital
		Pitkäniemi Mental Hospital, Nokia
		Turku University Central Hospital
France	Hospices civils de Lyon	Maison de Santé et de Cure médicale Antoine Charial, Francheville
		Hôpital Edouard Herriot, Lyon
Greece		Health Centre of the Hellenic Red Cross, Athens
		Evangelismos Hospital
Norway		Central Hospital, Rogaland, Stavanger
Poland	Medical Academy, Lublin	State Clinic Hospital No. 4, Lublin
United Kingdom		
England	University of Manchester	South Manchester Area Health Authority
Scotland	University of Edinburgh	Monklands District General Hospital
		Health centres (four), Cumbernauld
Yugoslavia		Health Centre, Maribor
Total: 11	7	23

Fig. 2. Network of collaborating and participating centres, 1982-1983



Funding of the Study

Funding of the study varied. In some countries the ministry of health was the source, in others national organizations, private hospitals, or voluntary or national funding agencies.

Personnel Required for the Study

Local contact people assumed local responsibility for teaching the data management process and assisting the specially designated programme manager to carry out selected phases of the study.

Nurse data collectors were first-level nurses[a] who were required to develop competence in the use of the nursing process. They participated in teaching workshops and other activities to develop a common framework and approach to the nursing process. They were key people, responsible for recording the nursing care plan.

Coders were assigned to code the data written on the data collection forms. They were also specially trained for this activity.

Within each country a computer centre processed the data at the national level, using a cleaning program supplied by the systems analyst of the Danish Institute for Health and Nursing Research, who devised the programs and participated in the teaching of programme managers and contact people.

Participating Centres

The 23 participating centres varied in their social, cultural, economic, climatic and geographical characteristics. The centres were not selected to be representative of the type of institution, region or country in which they were located, but because they were areas where the study could be carried out with the resources — particularly the nursing resources — required and the minimum purposive sample could be obtained.

In spite of many unforeseen events, all 23 centres were able to fulfil their commitments to the study.

Eleven countries and their respective centres participated in the study.[b] Belgium had three participating centres, all of which were hospitals. Czechoslovakia's participating centre was a medical clinic which is part of a teaching hospital. Denmark had five participating centres and also assisted the participating centre in Norway; the Danish centres were four hospitals and one home for the elderly. Finland had four centres, a city

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[a] The terms "first-level", "second-level", and "third-level" as applied to nurses are those adopted by ILO (*Employment and conditions and life of nursing personnel*. Geneva, International Labour Office, 1976 (Report VII(2), International Labour Conference 61st Session), p. 10).

[b] Details of the participating centres and their respective countries can be found in Chapter 1 of the full report.

health centre and three hospitals. France had three hospitals linked to one overall hospital administration. Greece used one community health centre and one hospital, Norway and Poland one hospital each. England used an entire health district, which consists of both hospital and community health facilities. However, England's final sample was taken from one of two hospitals. Scotland used one hospital and four health centres, Yugoslavia a community health centre.

2

The study

A comprehensive search of the literature was carried out using a number of sources. Differences in language and terminology made retrieval of some sources difficult.

The Person

The subject of the study was the person and his or her needs for nursing care. The holistic view of the person as a unitary system formed the framework of the study. The person has been studied over the ages by philosophers, theologians, humanists, social scientists and psychologists. In early European nursing history the person was first seen in the light of his or her religious aspects, and the origins of nursing can be traced to religious institutions. The holistic view of man has been elaborated in a number of ways by Rogers *(1)*, Raatikainen *(2)*, Maslow *(3)*, Lewis *(4)*, Havighurst *(5)* and Madsen *(6)*. Madsen, reportedly influenced by Maslow, developed a set of 20 motives or needs arranged in four categories corresponding to physiological, psychological, social and activity systems.

Other writers have examined man in relation to health and illness. Yura & Walsh *(7)* focus on seven basic human needs, Stevens *(8)* on time, human needs, and their relation to specific phenomena such as stress, strain, disequilibrium and deficits. Wood *(9)* argues that health is relative and indefinable and emphasizes the vulnerability of the individual to specific hazards. He notes that the sources of health lie within the individual and within the society in which the individual lives. Viewed in another way, the state of health of a person is an expression of the success or failure of his efforts to respond adaptively to environmental challenges *(10)*. These authors identify physiological, psychological and social aspects in human needs and their views place emphasis on the person's adaptability to the environment.

The person was viewed holistically in the study as a member of a group such as the family and of the larger community, who needs to survive and to develop his or her fullest potentialities. He or she continually adapts to the environment and seeks to maintain health. The categories of needs through

the satisfaction of which he or she achieves the state of adaptation to the family and the community are the concern of nursing.

Conceptual Framework

The major concern of the researchers was the needs of the person for nursing care. The framework chosen was that of the total human being and his or her need to maintain and promote health throughout life. Participation by the person in his or her health care is a central element in the caring process, i.e. the person assesses his or her own needs along with the nurse, establishes a plan to meet them, implements the plan and evaluates the outcome. The person is consequently seen as an active participant in the process. The extent to which the person can participate in this interactive process will affect and be affected by his or her own views on health and perception of need for care and self-knowledge, and by the nature of the person–nurse interaction (Fig. 3).

Factors that influence levels of health are religious or belief systems, family or community support, and ability to take responsibility for oneself and others.

The Nursing Process

The care of the person is the essence of nursing and the way the nurse carries out caring is the essence of the nursing process. Caring requires action based not on intuition but on a deliberate and organized approach towards solving problems that can be broken down into four components — assessment, planning, implementation and evaluation *(7,11–14)*. In this process the nurse, along with the person and the family, assesses, evaluates and works out alternatives and outcomes. The process helps the person to assume a greater share of responsibility for self-care and provides a way of evaluating the quality of care rendered.

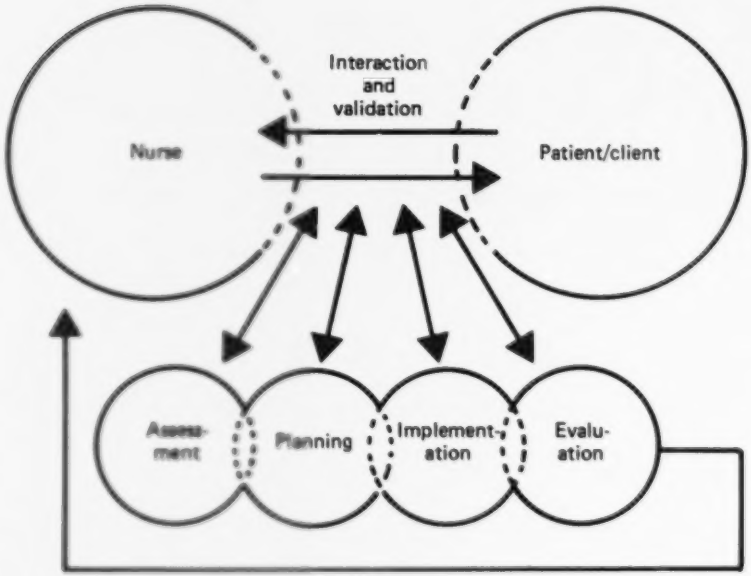
The nursing process was elaborated some 20 years ago as a systematic approach to the delivery of nursing care. Even then the process consisted of assessment, planning, delivery of care, and evaluation or assessment (Fig. 4). After the original assessment terms were coined, authors such as Yura & Walsh *(7)*, Hegyvary *(15)* and McFarlane *(16)* contributed to the subject. In 1982, a comprehensive bibliography on the nursing process was compiled by WHO *(17)*.

Problem, Purpose and Objectives

The major problem of the study was inadequacy of information, the major purpose to identify and describe nursing care needs, and the objectives the nursing interventions and outcomes related to those needs. An additional purpose was to generate information that would serve as a data base for the two sample groups of the study.

Fig. 3. Patient/client/nurse interaction

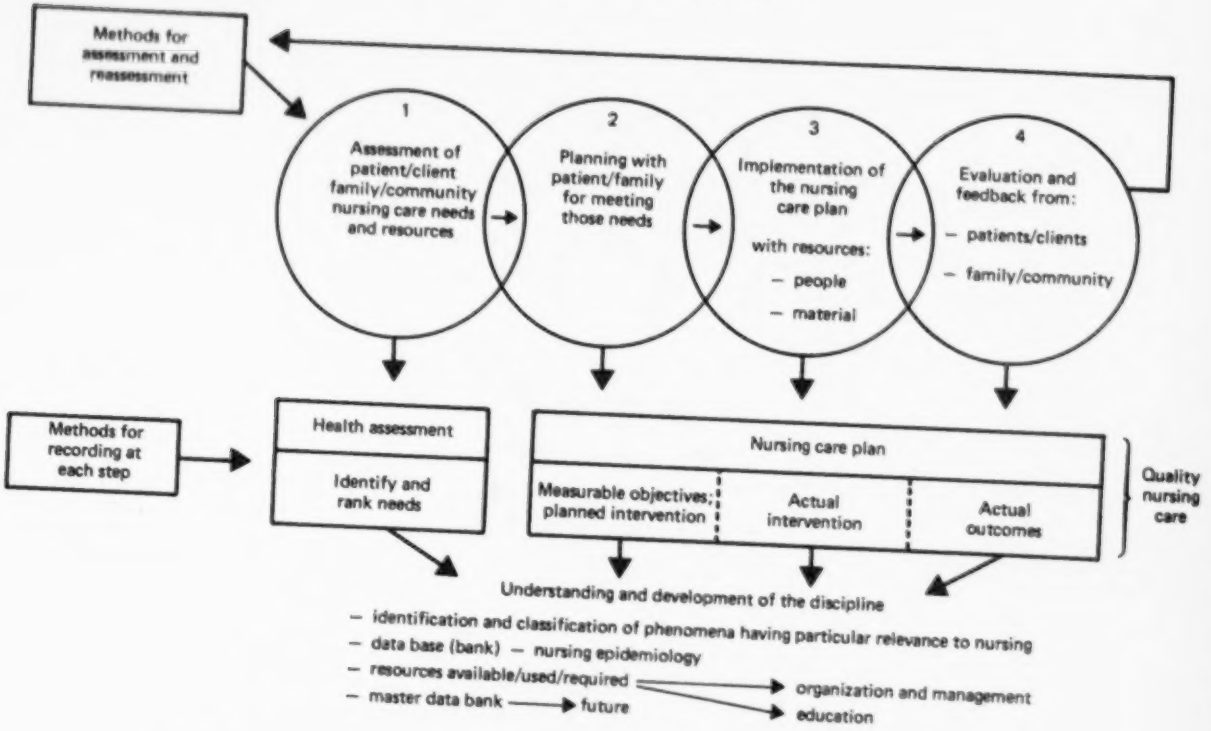
The nurse's personal philosophy of health, man and nursing, knowledge-based experience and interpersonal and technical skills will affect the interaction with the patient



The person's philosophy of health and man and his or her perception of his or her needs for nursing care as well as knowledge of himself or herself will affect the interaction with the nurse

13 Source: Prophit (11)

Fig. 4. Steps of the nursing process



Objectives of the Study

The four objectives of the study were related to assessment, planning, implementation and evaluation.

(*a*) Assessment:

- to identify and describe the needs for nursing care of two designated study groups within a designated time period;
- to identify the order of priority the nurse gives to those needs for action;
- to establish the frequency with which similar categories of needs for nursing care occur.

(*b*) Planning:

- to establish objective(s) for meeting identified needs;
- to describe the nursing interventions planned to meet the stated objectives;
- to describe the frequency with which similar categories of objectives occur.

(*c*) Implementation:

- to describe the nursing interventions undertaken to meet identified needs for nursing care;
- to describe the frequency with which similar categories of nursing interventions are undertaken in response to similar selected categories of identified needs.

(*d*) Evaluation:

- to describe the outcomes of nursing interventions;
- to identify the relationship of these outcomes to the stated objectives;
- to develop a nursing practice data base for defined groups of persons, using uniform instruments for data recording and collecting.

Value of the Study

The value of the study depends on the extent to which it leads to action to improve international cooperation, nursing research, nursing education and, above all, the delivery of nursing care. The study was expected to yield information about the basic nursing needs of two relatively large groups of people in the health care system: the elderly and those undergoing non-emergency surgery in hospitals. It indicates priority areas for in-depth

research and may be expected to have an impact on the health of individuals and families through the use of the teaching materials created.

The findings of the study should contribute to programme development and provide information about the requirements of a data base. It should also contribute towards the realization of the aims of the Alma-Ata Conference, the joint International Council of Nurses/WHO Workshop on the Role of Nursing in Primary Health Care *(18)* and the European regional targets *(19)*. Finally, it should contribute to the further development of systematic, scientifically-based nursing practice.

Assumptions and Limitations

A number of assumptions and limitations were made in the design of the study, five of the limitations being related to the setting, the samples, the data collection instruments, the data collectors and the procedures.

Ethical Considerations

International and national standards for the protection of the human rights of research subjects were strictly adhered to in the study, the procedures of which were in keeping with the Helsinki Declaration *(20)*. In the study no individuals were identifiable and the data were grouped for analysis. It was also agreed that information about individual countries would not be revealed and this commitment was upheld.

At the international level the study was reviewed three times by the European Advisory Committee on Medical Research.[a] At meetings before the data were collected programme managers were reminded of the following steps required at the national level: informed consent, protection of the subjects from harm, anonymity, confidentiality, and freedom from exposure.

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3

Methods

Study Design

The study was designed as a collaborative[d] descriptive one with an exploratory approach, the intention being to gather data on a purposive sample of elderly people and of patients/clients undergoing non-emergency elective surgery.

After receiving the participants' approval, a health status assessment was made of all the persons studied within two weeks of their admission into the health care system. If they had been or were already in the health care system, the assessment was completed on their admission into the study.

The Settings

The settings for the study were hospitals and the community. The 23 participating centres, which employed first-level nurse data collectors trained and experienced in the nursing process, were in Belgium (3), Czechoslovakia (1), Denmark (5), Finland (4), France (2), Greece (2), Norway (1), Poland (1), the United Kingdom (England 1, Scotland 2), and Yugoslavia (1). They were geographically representative of the European Region but no attempt was made at the local level to set the number of hospital settings off against the number of community settings.

For the elderly group the settings were (*a*) acute care inpatient facilities, nursing homes, rehabilitation centres and long-term facilities where professional nursing care was available, and (*b*) their own homes. The surgical group was taken from hospitals where elective surgery was carried out. Candidates for surgery were admitted as inpatients and nursing care was administered by first-level nurses trained in the nursing process.

[d] A collaborative study is one that implies joint decision-making by those conducting the research on substantive as well as methodological issues (*1*).

Local, regional and national support was maintained through the health authorities in each of the 11 countries. Full access to the two sample groups was accordingly ensured initially and throughout the phases of the study.

The Samples

Two groups were selected for the study: elderly people aged 65 years and over and people aged 17–64 years requiring non-emergency surgery, located in community or hospital inpatient settings. A minimum of 40 and a maximum of 100 persons were required for the samples and (*a*) they were to be typical of those for whom nursing services were usually provided, (*b*) they were to fall within a representative age range, (*c*) they were to be located in a community or hospital facility, and (*d*) they were expected to present a wide variety of nursing care needs.

Further stratification of the sample was not possible if the expected sample size was to be reached.

These groups were selected because of concern about the growing number of elderly people in Europe and the considerable resources spent on those undergoing elective surgery.

The sample of the elderly

The elderly group consisted of a purposive sample of a minimum of 40 male and female elderly people who met the sample criteria stated above and who at the time of the study were receiving nursing care. The sample was not limited to people who communicate orally, nor were any restrictions placed on their diagnostic category, degree of illness, mobility, consciousness or physical incapacity or on the nature or extent of the nursing care required.

The selection for both groups was made by the responsible nurse at the respective study settings between the designated data collection dates of January and June 1983. A health assessment form had to be completed within 48 hours of admission and 4 nursing care plans were to be completed, 1 per 24 hours or, in the community, per visit.

The surgical sample

The purposive surgical sample consisted of a minimum of 40 men and women between the ages of 17 and 64 years who required elective non-emergency surgery. No restrictions were imposed in relation to the diagnosis, degree of illness, level of mobility, mental or physical incapacity, or nature or extent of nursing care required. All the subjects had to be available to enable the nurse to complete the health assessment form within 48 hours and the 4 nursing care plans, 1 every 24 hours (P. Ashworth, personal communication, 1983).

The subjects used in testing the instruments for the pilot study conducted before the main study were not included in either of the final samples.

The Data Collection Instruments

Two instruments were used — the health assessment form, created by the investigators for the purposes of the study, and the nursing care plan, which

is a modification of an accepted standardized instrument used in nursing practice. Guidelines to assist in the completion of the health assessment form and a basic tabulation list with coding instructions were prepared.

Health assessment form

The health assessment form, a 27-page data collection instrument used to record data on the person's current health situation, is based on the conceptual framework of the study. It consists of a social and environmental section (23 items), a health history (10 items) and a functional health status section (19 items). The instrument was designed to document both the self-reported and the observed current health status of the person.

Data were entered on to the descriptive section of the instrument and then coded by a coder.

Nursing care plan

The nursing care plan was used by the nurse to elicit and record systematically the nursing needs of the subject and the care given. It consists of the following: identification, assessment, data source, identified needs for nursing care, ranking of needs, planning, implementation and evaluation. The nursing care plan is based on the view that a set of common needs exists and can be described in writing.

The nursing care plan was to be completed daily on the same subject over a minimum period of four days. Each subject in each of the two samples was to receive direct care by a qualified first-level nurse or a person who was to report to a nurse possessing such qualifications.

Definition of Terms

Definitions of the terms developed to accompany the instruments were refined throughout the study and translated into each of the nine languages.[4]

Forms and Procedures

Specific steps were taken to ensure that the data were uniform and usable for analysis. Selected procedures were put in writing and three tests of the data collection instruments and a pilot study were made. The instruments were assessed for intra-rater and inter-rater reliability, scorability, ease of administration, clarity of language, format, instructions and timing.

Special steps were taken before, during and after data collection to ensure the consistency, confidentiality and safety of the documents, the availability of data collectors, appropriate transfer of the complete coded forms, and their final dispatch to WHO and the computer centre at the Danish Institute for Health and Nursing Research.

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[4] The terms were translated into Czech, Danish, Finnish, Flemish, French, Greek, Norwegian, Polish and Slovene. They appear in Annex 1 of the full report.

Validity of the Data Collection Instruments

The face and content validity of the instruments was tested in three preliminary tests. The experts concluded that the contents of the health assessment form were in accordance with the conceptual framework of the study and that, with modifications to emphasize the holistic approach, the nursing care plan reflected the objectives of the study and the definitions.

Reliability and Consistency of the Data Collection Instruments

The principal approach used was by indirect measures, as suggested in the Kohn & White multinational study *(2)*. It specifically involved comprehensive and detailed instructions, data collector and coder training programmes, a series of meetings related to the study, a glossary of definitions, three preliminary tests and a pilot study.[d] Quantitative steps were taken to ensure the reliability of the nursing care plan.

Language Translation

To ensure that the items on the two data collection forms had the same meaning in the other languages as in English, the translated terms were revised over a three-year period by translators familiar with nursing or by the programme managers themselves. This procedure has been used successfully by other researchers. Analysis of the translated versions, which were then translated back into English, indicated equivalence of the terms in all the languages used.

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[d] A description of the documents produced can be found in Chapter 4 of the full report.

4

Data management

Management of the data was required from the time it was recorded by the nurse to its analysis by the Danish Institute for Health and Nursing Research. A series of courses prepared the nurses for the collection of data on the instruments, and coders were taught how to code data and quantify descriptive statements for computerization.

Coding

The coding procedure, refined over a two-year period, was developed in the preliminary tests and tried out in the pilot study.

Computer centres were designated at the national level to handle the data, for which compatible hardware and software had to be ensured. Standardized procedures were developed for the entire transmission process, which was preceded by a data cleaning program.

Instructions for coding were provided along with the coding system used in the Ninth Revision of the International Classification of Diseases.[4]

Quantifying Descriptive Data

The nursing care plan was structured to provide descriptive data that could be reduced to mutually exclusive coding categories. These categorizations were examined repeatedly during the three preliminary tests and the pilot study.

Coding Instructions

Coders received specific instructions about the transfer and placement of quantified data and the steps to be taken if no information was offered.

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[4] *Manual of the international statistical classification of diseases, injuries, and causes of death*, ninth revision. Geneva, World Health Organization, 1977.

Measures were taken to ensure confidentiality and completeness throughout the entire procedure.

The forms from which the data were transferred to computer records were designed to match the computer record. The transfer of coded data to magnetic tape or punch cards was carried out by the computer centre. In order to meet the deadlines, strict adherence to a tight schedule was necessary.

All the data for inclusion in the analysis were received and transferred within a reasonable time and in a compatible format.

The tools were also assessed for ease of administration, time, economy, efficiency and language validation.

5

Findings of the study

Characteristics of the Final Sample

The final sample consisted of 1154 subjects, 707 elderly and 447 surgical. Only 25 were eliminated from the 23 participating centres because they did not meet the sample criteria. The data were obtained by interview with and observation of the subject and family or from other sources.

The first objective of the study was (*a*) to identify and describe the nursing care needs of the two designated groups within a designated time period, (*b*) to identify the order of priority the nurse gives to needs for action, and (*c*) to describe the frequency with which similar categories of needs for nursing care occur. The health assessment form was used to collect data concerning social and environmental conditions, health history and functional health status.

The Elderly Group

Objectives of the study: assessment

Social and environmental data (health assessment form section I)
The elderly ranged in age from 65 to 98 years, with an average age of 76.8. About 40% were admitted to the health system as emergencies, 60% as non-emergencies.

For 60% of the elderly religion was important or very important. Ninety-five per cent were nationals of the country they were in, and 98% were able to communicate verbally with the nurse. Forty per cent lived alone, and for almost half the closest caring person was a child, for about one third a spouse; one out of ten had no identified support person or group. Three out of four had no dependants relying on them for help. About 85% found their residence of positive benefit to their health. For almost half social activities were not part of their daily activities.

Over half of the elderly required some or full assistance in economic activities, and about four out of ten were completely dependent or required some assistance in shopping. Half reported being wholly or partly dependent on domestic assistance and about half required total or part assistance in

personal care activities. Almost 4 out of 10 reportedly did not participate in recreational activities, and half of those who did found them of positive benefit to their health. Six out of 10 found all family relations of positive benefit to their health; 12.2% were not part of a family.

The majority were retired (85.7%); 5% worked in or outside the home.

Most of the elderly did not smoke (79%), and over half (61.8%) did not use alcohol. Of those who did, 19.5% found it of positive benefit to their health. The majority of the elderly (70.1%) did not use self-prescribed drugs.

Health history (health assessment form section II)

The need for nursing care was cited by 17.1% as the reason for admission into the health care system. In all 37 diagnoses were recorded, admission as a preventive measure accounting for 3.1% of the reasons. Over half of the admissions were for other than medical treatment. Almost half of the sample reported very positive experience with the health care system (Fig. 5).

Only one fifth of the sample were free of disability. Most (78.6%) could not point to any life events that had improved their health, and about half (51.1%) could not point to any that had diminished their health. However, deaths (18.1%) and accidents (4.1%) were mentioned as having had an influence.

Inability to care for themselves, dependence on others, and financial worries were reported as difficulties anticipated on discharge.

Functional health status[a] (health assessment form section III)

The functional health status section covered 19 functions, circumstances that affected function, aids used to support function, and resulting discomfort. The focus was on the present, as viewed in the light of past events that affected current function.

Function was either maintained or changed. Precipitating events were physical, psychological, social or multiple. Aids to function were nutritional, pharmacological, mechanical/technical or a combination. Discomfort could be classified as physical, psychosocial or multiple.

Among the elderly the most frequently reported functional changes were in body movement (44%), sleep/rest (35.9%) and ingestion/digestion (33.7%). The most frequently occurring precipitating event was related to body movement (68.6%). The aids most frequently reported were pharmacological and mechanical in nature. Of the mechanical aids, 75% were for vision.

Discomfort was reported as none, physical, psychosocial, or multiple. In the elderly group all bodily functions were accompanied by some discomfort (Fig. 6). The most frequently reported discomfort was related to body movement, circulation, sleep/rest and ingestion/digestion — the four functions that had most recently changed. Discomfort was most often physical, next multiple. Overall, the sensory functions caused less discomfort than the major organs.

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[a] More details on functional health status can be found in Chapter 5 of the full report.

Fig. 5. Elderly group: diagnosis on admission

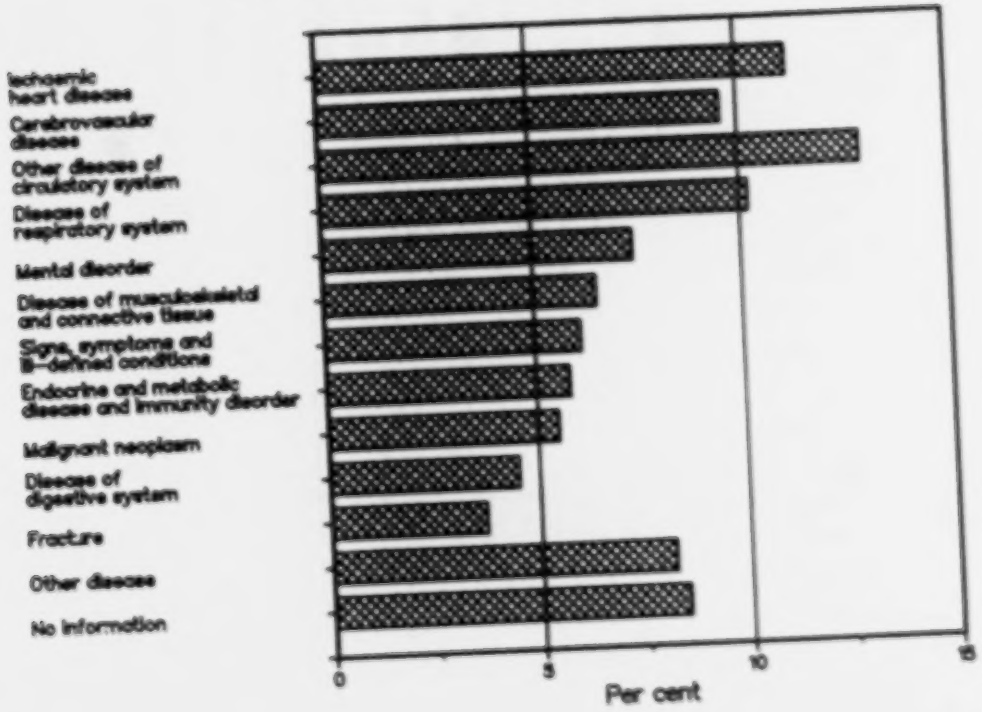
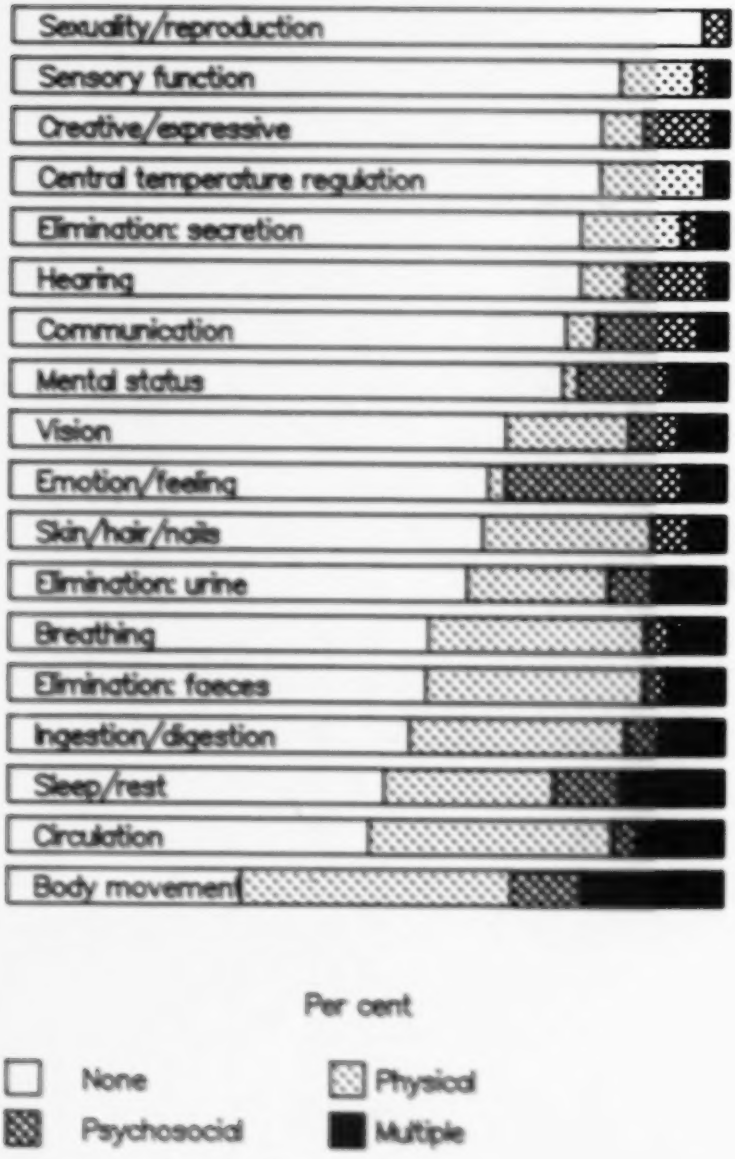


Fig. 6. Elderly group: discomfort related to function



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One third of the sample experienced some change in breathing function and over one third had experienced a precipitating event of a physical nature. The majority (63.1%) used no breathing aids. If used, they were most often pharmacological. About 4 out of 10 experienced some discomfort in breathing.

About one third experienced a change in circulatory function, half reporting a precipitating event. Pharmacological agents were used by 67.1%. Half experienced no circulatory discomfort. Of those who did (33.8%), discomfort was of a physical nature.

One third reported a change in ingestion/digestion, and 38.3% identified a physical precipitating event. For this function about one third used nutritional aids, and for the same proportion physical discomfort was reported.

A change in elimination/urine was reported by 24.3%, the precipitating events being physical in nature. Of those using aids, 43.4% used mechanical/technical ones. About a fifth reported physical discomfort.

Over one quarter (28.4%) reported a change in elimination/faeces, and 34.1% reported a precipitating event. Of the 355 using some type of aid, about half (53.2%) used pharmacological agents. Almost one third of the discomfort reported was physical in nature.

A change in elimination/secretion (perspiration) was reported by 17.5% and 17.7% mentioned a precipitating event. Of the 133 reporting the use of some aid, 39.1% used pharmacological ones. Eight out of 10 reported no discomfort for this function.

The majority (80.6%) reported maintenance of central temperature regulating function, and no changes were reported by 73.6% in relation to skin/hair/nails. The majority (91.1%) reported no change and no discomfort in sensory function; 85.7% maintained vision, and 92.8% reported no change in hearing. Almost two thirds maintained sleep/rest function, 35.9% indicated a change. Of the 353 reporting the use of aids, 82.2% used pharmacological agents. In relation to body movement, 44% reported a change. For 59.8%, physical precipitating events predominated. Multiple discomfort was reported by one fifth, discomfort of a physical nature by 37.8%. The majority (87.1%) reported no change in communication function, and 71.7% reported no precipitating events.

Almost all subjects (97.5%) reported maintenance of sexuality/reproductive function, and most (91.9%) indicated no precipitating event.

Mental function was changed for about one fifth (21.9%). Aids were used by 17%, 65.9% of them pharmacological.

One quarter (25.5%) experienced a change in emotion/feeling function; and 56.4% reported no precipitating event, 24% a psychosocial one. Multiple events were reported by 1 out of 10 (10.2%).

Creative/expressive function was maintained for 85.1% of the sample. For 21.6% there was a precipitating event, physical in nature. Most (82.3%) reported no discomfort.

Only 9 subjects showed signs of being in the terminal stages of life. Physical precipitating events were reported for 6 and multiple precipitating events for 2.

Nursing care needs of the elderly

For each elderly subject admitted into the study, four nursing care plans were written. A total of 11 219 needs was assessed on the health assessment form. For the four-day period the most frequently reported needs were related to skin/hair/nails, body movement, elimination and ingestion/digestion. Overall, the top needs remained in the top third, the next eight remained in the second third, and the bottom eight remained in the bottom third; thus the needs did not differ much over the four-day period. Although certain needs were those most often reported, they were not ranked as the most important (Fig. 7). For the elderly group body movement ranked first, followed by sensory function.

The total number of data sources used to identify the needs of the elderly was 30 805, or 43.6 per subject, 10.6 per nursing care plan. The major data source used to identify needs was the functional health status data section of the health assessment form (61.2%). The health history section was used for 25% of needs, and the social/environmental category for 8.8%. Of the functional status categories, the most frequently used were: body movement, elimination, ingestion/digestion and circulation.

The first nursing care plan was referred to for most of the needs, next the second,and finally the third. Thus both data collection forms were used, but to a varying extent.

The second major aim of the study related to planning was to describe (*a*) the objectives established to meet identified needs, (*b*) the nursing interventions planned to meet the stated objectives, and (*c*) the frequency with which similar categories of objectives occurred. To achieve this aim 24 categories of needs were used. Any objective recorded by the nurse was placed in one of the following six categories: cognitive; affective; psychomotor; physical/physiological; social/interactive; and other.

Objectives of the study: planning

Patient/client nursing care objectives

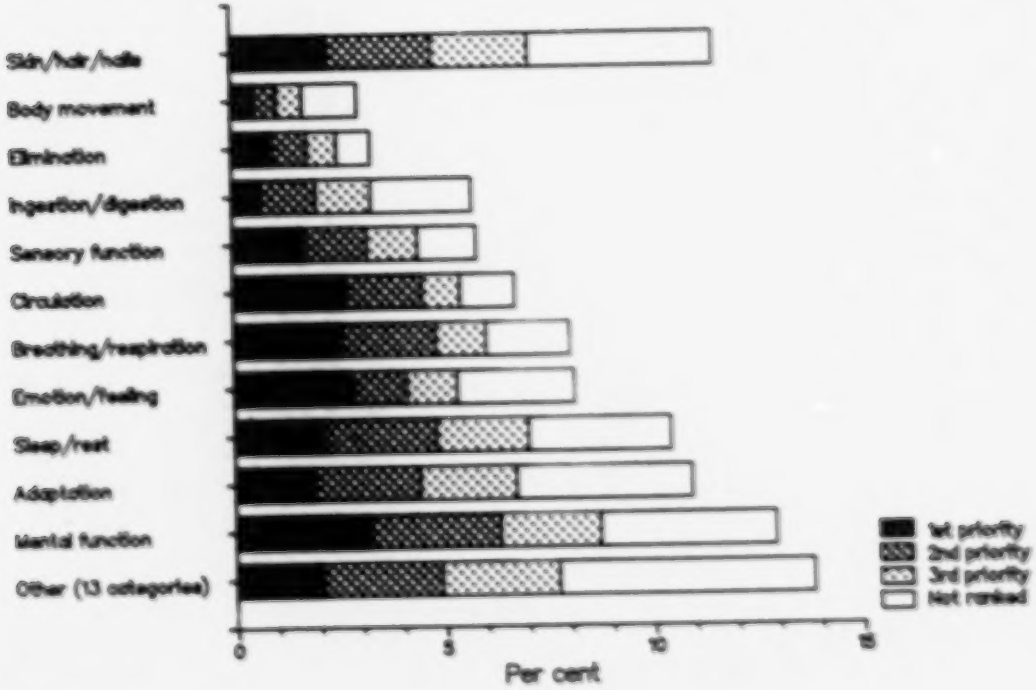
For the elderly group a total of 14 108 objectives was reported , or 20 objectives per patient, 5 per day, 1.35 per need. Most of the objectives (41.9%) were related to physical/physiological needs, followed by psychomotor (27%) and affective (15.7%). The nursing interventions planned fell into one of the following categories: education/information-giving; information collection/observation; doing/acting for; psychological support; doing/acting with; coordination; and other.

Planned and unplanned interventions

A total of 30 991 planned interventions was carried out, of which the greatest proportion was for doing/acting for (27.6%), followed by doing/acting with (21.5%) and education/information (21.3%). The proportion for psychological support (12.9%) was considerably less. Only 0.2% were attributed to the category "other".

To meet the most frequently reported physical/physiological objectives the interventions were doing or acting for the patient/client (42.4%), then

Fig. 7. Elderly group: frequency and ranking of identified needs for nursing care by category



education/information-giving (17.1%). For the second most frequently reported objectives — psychomotor — one third of the interventions (34.8%) were doing/acting with and one fifth (21%) doing/acting for. The category doing/acting for decreased over the four days, as did education and doing/acting with. Psychological support remained fairly evenly distributed over the total time. In all, the interventions decreased in total frequency over the four days (Fig. 8).

Objectives of the study: implementation

The third major objective, implementation, was to describe the nursing interventions undertaken to meet the identified nursing care needs and the frequency with which similar categories of nursing interventions are undertaken in response to similar selected categories of identified needs.

Planned interventions were either carried out or not. Unplanned interventions also took place but the recording was limited to one unplanned intervention per objective. In the elderly group 94% of the interventions planned were carried out, the percentage ranging in the seven categories of interventions from 89.1% for coordination to 96.9% for education (Table 2). For the group 778 unplanned interventions were reported, or 1 unplanned intervention for every 39 planned interventions (Table 3). Most were in the category doing/acting for.

In the sample of the elderly 94% of the planned interventions were recorded as carried out. The percentage varied among the seven categories of interventions, ranging from 89.1% for coordination to 96.9% for education.

Objectives of the study: evaluation

The fourth objective, evaluation, was to describe the outcomes of nursing interventions and identify their relationship to the stated objectives. The outcomes could: exceed expectations; totally meet expectations; not totally meet expectations; and not meet expectations at all.

Of the 14 108 objectives, over half (56.9%) were totally met; one fifth (21.8%) were not totally met; 13.6% were not met at all; 3.3% were classified as "other"; 0.9% exceeded expectations; and 0.8% regressed (Fig. 9).

The Surgical Group

Objectives of the study: assessment

The surgical group consisted of 250 women and 197 men ranging in age from 17 to 64 years. The average age was 46.5 years, the median age 48.5. The majority (61.3%) were admitted directly into the study on admission into hospital.

Social and environmental data (health assessment form I)

Over half of the group (57.6%) reported that religion or a belief system was very important or important to them. The majority (90.4%) were nationals of the country they were in, and 99.1% could communicate verbally with the nurse. Most (88.1%) did not live alone. For 70.9% a spouse was the closest

Fig. 8. Elderly group: planned interventions as shown in nursing care plans 1-4

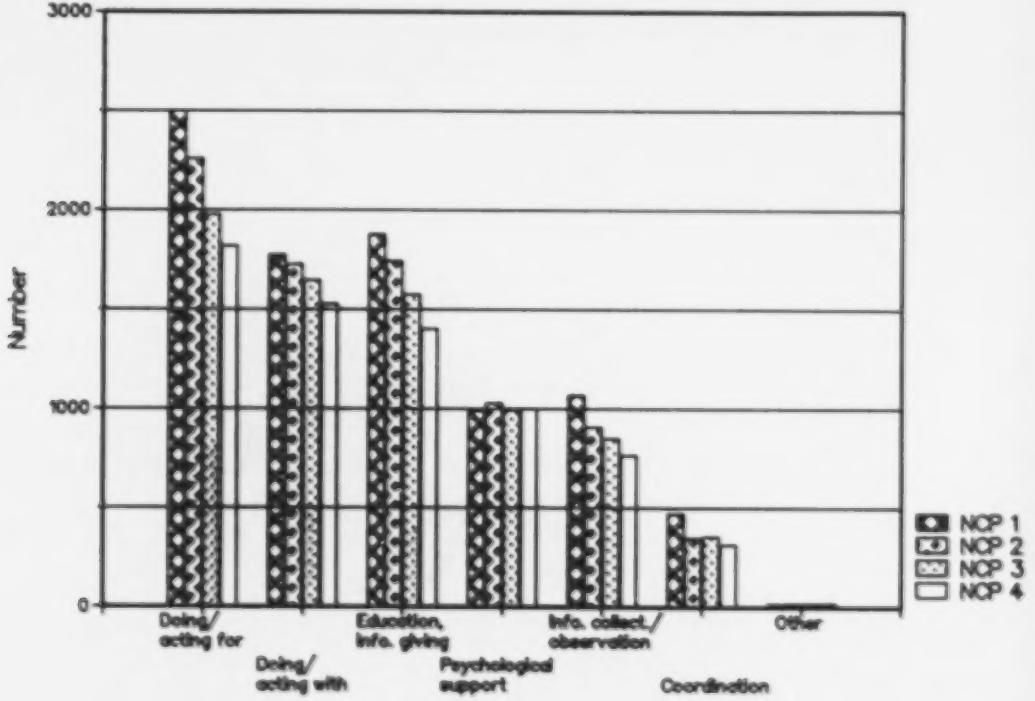


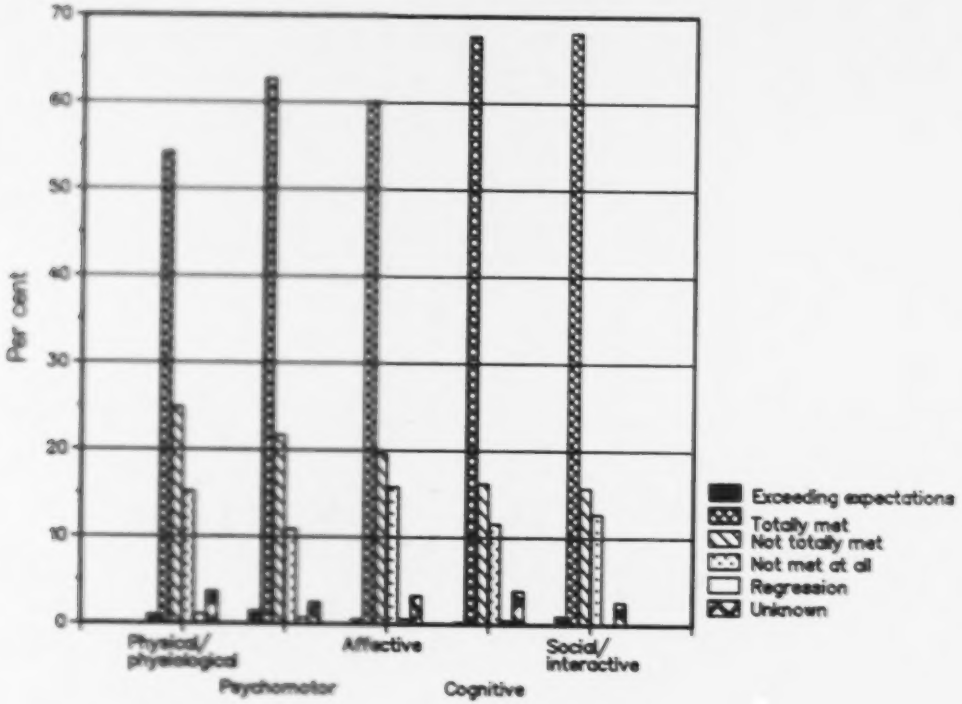
Table 2. Elderly group: percentage of planned interventions within a category and distribution of categories for those carried out and those not carried out

Category of intervention	Percentage carried out within categories	Distribution of category for interventions carried out (N = 28 955)	Distribution of category for interventions not carried out (N = 1 859)
Education/information-giving	96.9	22.0	11.0
Information collection/observation	94.6	11.7	10.4
Doing/acting for	92.9	27.2	32.2
Psychological support	94.8	13.1	11.2
Doing/acting with	92.7	21.3	26.2
Coordination	89.1	4.5	8.7
Other	91.7	0.2	0.3
Total	94.0	100.0	100.0

Table 3. Elderly group: unplanned interventions (N = 778)

Unplanned intervention	Distribution (%)
Doing/acting for	55.4
Coordination	12.5
Education/information-giving	11.7
Doing/acting with	11.1
Information collection/observation	4.6
Psychological support	3.0
Other	1.8
Total	100.0

Fig. 9. Elderly group: extent to which objectives for nursing care were met



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caring person, for 28.2% children; but for 32.9% others such as parents, friends, siblings, or neighbours. Four out of ten had dependent children, 27.1% a dependent spouse.

Over half engaged in all social activities (60.2%), but over one third did not. The majority (83.8%) were totally independent in economic activities, 72.9% in shopping activities. Almost all (97.1%) were independent in personal care activities.

Most (92.6%) found their home, and 327 out of 433 found family relations, of positive benefit to their health. Half of the group worked outside the home, 17.6% worked in the home, and 9.2% were unemployed. Half found that work was of positive benefit to their health and one quarter that it had no effect on health.

The majority (60%) did not smoke. Of those who did, one quarter believed that smoking was harmful to their health. About one third of the group did not use alcohol; of those who did, 35.1% said that it had no effect on their health. Seven out of ten did not take self-prescribed drugs. One out of ten expressed concern about health insurance.

Health history (health assessment form section II)

All 447 subjects in the surgical sample were in hospital and all, in accordance with the sampling criteria, had been admitted as non-emergency cases. The majority (90.3%) were admitted for treatment; most frequently for surgery of the digestive and circulatory systems, in lesser frequency for malignant neoplasms and endocrine and metabolic diseases (Fig. 10).

The majority (83.7%) reported very positive or acceptable experience with the health care system. Most (69.2%) reported no incapacitation, about one third (31.1%) partial incapacitation.

Most (70%) could not point to any life event that had improved their health. A change in marital status had for 5.8%, and a household move for 4.7%. For 13.2% improved health status was attributed to the category "none of the above reasons". Over half (58.2%) said that no life events had diminished their health. For 8.5% a death had, for 4.3% a change in marital status, and for 3.8% an accident. For 17% an effect not listed was reported.

The majority (72%) reported no concerns upon discharge. For 8.5% work was identified as a matter of concern and for 6% dependence on others. For 4.5% lifestyle was mentioned, and for 2.9% self-care.

Functional health status (health assessment form section III)

For the surgical group the most frequently reported changes in function were in ingestion/digestion (35.1%), emotion/feeling (30%), and sleep and rest (23.5%). For this group the correlation between change in function and a precipitating event was very high ($r = 0.97$). The Spearman correlation between discomfort and functional status was also very high ($r = 0.97$) (Fig. 11 and 12).

Most maintained breathing function (86.8%) and circulatory function (80.8%) and for the latter 23.7% had experienced physical precipitating events, for the former 27.3%. Most (69.8%) experienced no circulatory discomfort, 23.9% discomfort of a physical nature. Ingestion/digestion

Fig. 10. Surgical group: diagnosis on admission

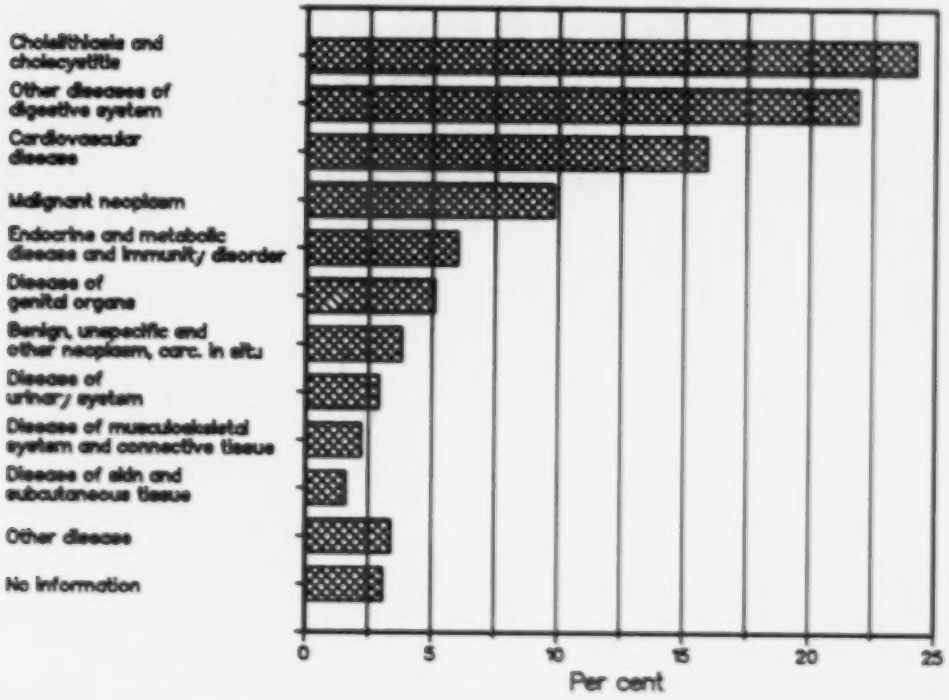

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Fig. 11. Surgical group: functional areas maintained or changed

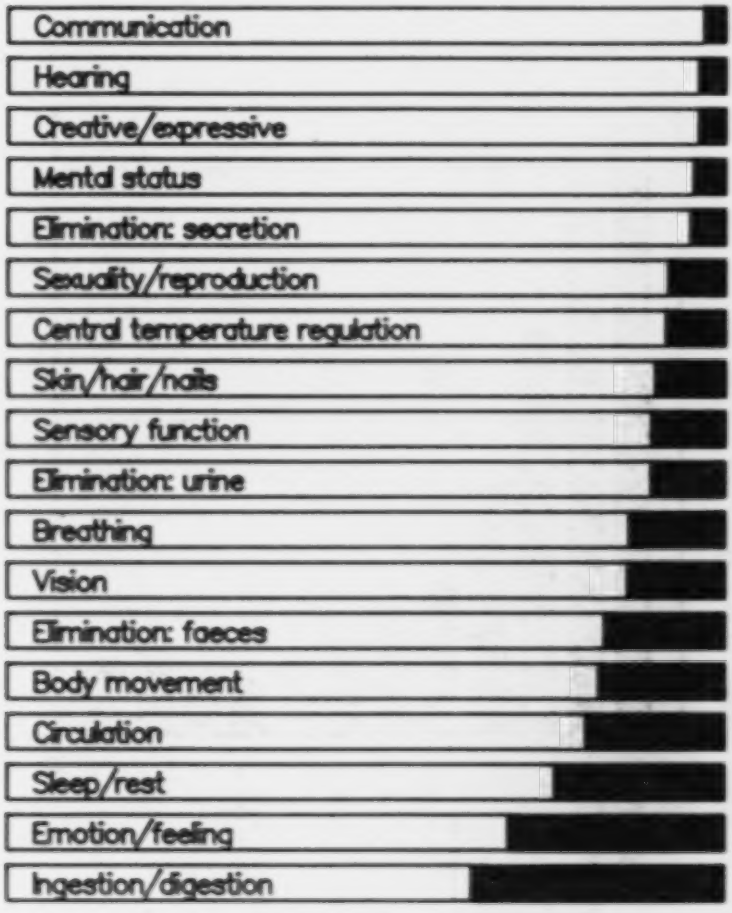
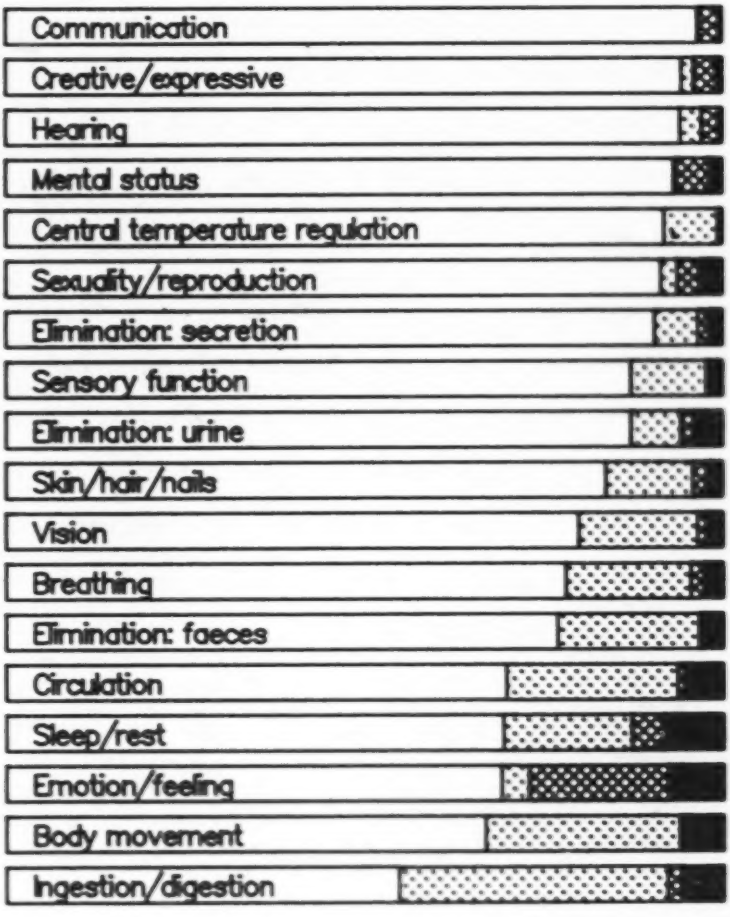


Fig. 12. Surgical group: discomfort related to function



function was changed for over one third (35.1%), although half (52.1%) reported no precipitating event; 37.4% reported physical discomfort. Of the 195 who used aids, 40% used nutritional aids, 34.4% pharmacological, 15.9% a combination.

Elimination/urine function was maintained by 89.9%; 85% reported no precipitating event, 13% precipitating events of a physical nature. No discomfort was reported by 87.2%.

The majority (83.4%) maintained elimination/faeces function. Physical precipitating events were reported by 19.7%, but most (74.7%) reported none. Of the 118 using aids, 46.6% used pharmacological and 37.3% nutritional ones. Most (77%) reported no discomfort, but for 19.7% physical discomfort was noted.

Nearly all subjects (95.3%) reported no change in elimination/secretion function, no precipitating events (90.2%) and no discomfort (91.6%).

The majority (90.4%) reported maintenance of skin/hair/nails function; 83.7% reported no precipitating events. Most (83.9%) reported no change in sensory function, 87.9% no precipitating events and 87.2% no discomfort.

Most of the group (86.6%) experienced no change in vision, 73.2% no precipitating event, and 79.9% no discomfort.

Almost all (96.4%) reported no change in hearing function, no precipitating event (93.1%) and no discomfort (94.2%).

For 23.5% a change in sleep/rest occurred, with no precipitating events noted by 60.9%. Of the 129 using aids, 82.9% used pharmacological agents. No discomfort was reported for 69.4%. No change in body movement was reported by 82.6%, no precipitating event by 69.8%, physical precipitating events by 28.6%, physical discomfort by 27.1%.

Nearly all the sample (97.1%) reported no change in communication function, 88.1% no precipitating event, 96.6% no discomfort.

The majority (92.2%) reported no change in sexuality/reproduction, 88.1% no precipitating events, 91.5% no discomfort.

Most (95.7%) reported no change in mental function, 95.6% no precipitating event, 93.3% no discomfort.

Change in emotion/feeling function was reported by 30%, no precipitating event by 52.1%, events of a psychosocial nature by 24.6%. No discomfort was reported by 69.1%, psychosocial discomfort by 19.5%.

In this surgical group 96.4% maintained creative/expressive function and no precipitating events were reported by 89.5%, no discomfort by 94.4%. None of the surgical group showed signs of being in the terminal stages of life.

Nursing care needs of the surgical patients

The surgical group consisted of 250 women and 197 men with an average age of 46.5 years and a median age of 48.6. Most (61.3%) were admitted directly to the study on admission into the health care system; over one fifth (22.6%) between the first and third day of admission.

For the surgical group the first of the four required nursing care plans had to be completed before operation, the second begun not later than 36 hours after completion of the first.

A total of 7570 needs was identified, of which the greatest frequency was recorded for day 2 (5.19 per patient), then day 3 (4.43), then day 1 (3.71), the day before surgery.

The greatest needs reported on the nursing care plan before surgery were emotion/feeling and adaptation (11.6%). On day 2, the day after surgery, ingestion/digestion (16.3%) moved from sixth to first place, followed by circulation (15.9%), which moved from seventh to second. On day 3 the greatest needs were for skin/hair/nails (16.5%), ingestion/digestion (15.3%) and circulation (11.9%). On day 4 elimination appeared as the third most frequently reported need (12.3%), preceded by skin/hair/nails (15.9%) and ingestion/digestion (15.3%).

The total number of data sources used was 11 012, 24.6 per patient, 6.1 per patient per nursing care plan. The sources most often used were the health history section of the health assessment form, the functional health status data of the health assessment form, the nursing care plans and, lastly, the social and environmental section of the health assessment form.

The functional areas most frequently referred to were emotion/feeling, circulation, elimination and sleep/rest. Of all the nursing care plans, the nurse used the second (the first completed after surgery) most often as a data source and the pre-surgery nursing care plan next.

Objectives of the study: planning

For the surgical sample, 8847 nursing care objectives, or 19.8 per patient, were recorded; 5 per day and 1.25 per need. Over half the time physical/physiological objectives were reported (60.4%), followed by psychomotor (20.9%) and cognitive (8.8%).

Planned and unplanned interventions

A total of 18 518 planned interventions was recorded, most in the category doing/acting for (38.6%), then information collection/observation (22%) and education/information-giving (14.2%) (Fig. 13).

For the highest ranking objective (physical/physiological) almost half (46.8%) were in the category doing/acting for, over one quarter (27.6%) in the category information collection/observation.

The planned interventions for the group followed the needs recorded as expressed in the health assessment form and as expected from the nature of the diagnosis on admission to the hospital. Nearly all the planned interventions (94.6%) were carried out, most of the differences being noted between the categories.

Psychological support (54.7%) and doing/acting for (54.7%) ranked highest among the 658 total unplanned interventions recorded. The ratio of unplanned interventions to planned interventions was 1:28. The most frequently reported unplanned interventions reported were in the category doing/acting for (66.6%), followed by information collection/observation (10.5%).

Fig. 13. Surgical group: planned interventions as shown in nursing care plans 1-4

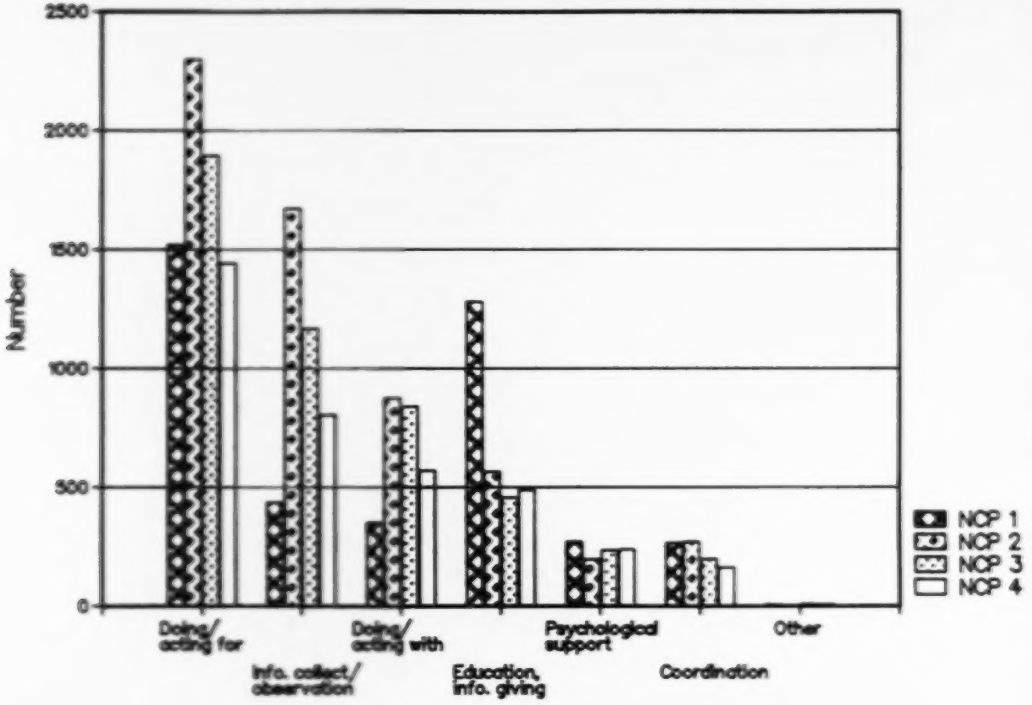
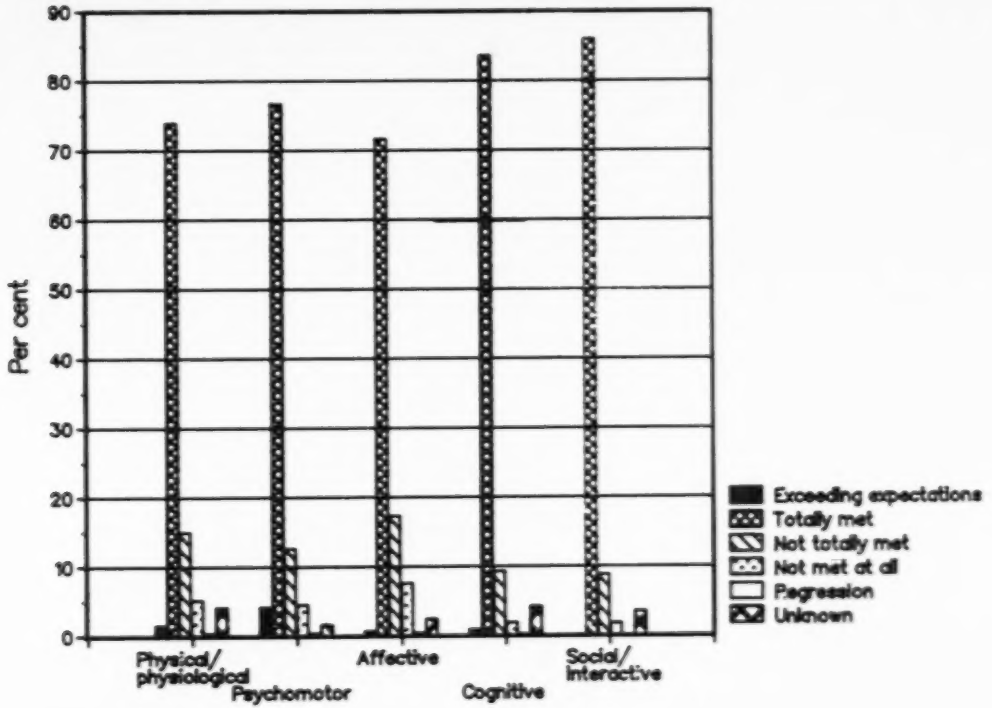


Fig. 14. Surgical group: extent to which objectives for nursing care were met



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Objectives for the study: implementation

In the surgical group 94.6% of the interventions were recorded as carried out. The percentage carried out differed between the categories, ranging from 92.1% for coordination to 98.1% for education/information-giving.

Objectives for the study: evaluation

Three quarters of the needs of the group were totally met, 14.2% were not totally met, 5.0% were not met at all and 1.9% exceeded expectations. For 3.9% the category "unknown" was recorded or nothing at all was recorded (Fig. 14).

6

Analysis and interpretation of the findings

The framework for analysis was established in advance by the programme managers.[a] The study is reported by objective when descriptive methods are used to analyse the data.

The Elderly Group

More women than men were represented in the elderly group and 62.4% were 75 years of age or over. None of the subjects had to be eliminated from this group, which was drawn from 13 hospitals, 5 community settings and 17 centres (one with both a hospital and a community setting). Three centres could not meet the criterion requiring a minimum of 40 patients/clients.

Health assessment

When the elderly person was admitted to the health care system the health assessment form was used to collect social and environmental data, a health history and information on functional health status.

Social and environmental data

Over half of the elderly found religion or a belief system important or very important. A wide range of responses was observed between centres, which may reflect the influence of cultural factors.

Ninety-eight per cent were able to communicate verbally with the nurse, a finding that may have been influenced by a selection factor among nurse data collectors. Ninety-five per cent of the group were nationals of the country in which they lived; thus no major cultural or language differences could be claimed to have had an effect on interaction with the nurse.

Of the elderly group relatively few (5.7%) of the needs reported fell within the social environmental category, yet most were retired and 4 out of 10 did not participate in recreational activities. However, the majority were in hospital, and the four days allocated to data collection may have been too short a time for sufficient attention to be paid to this aspect of care. The

[a] At Brussels, 1982; Copenhagen, 1982; and Brussels, 1983.

finding may also to some extent be attributed to the emphasis placed on physical aspects of care in nurses' education. Considerable differences appeared among the centres, which may be due to differences in interpretation of the item by the nurse, the elderly person or both; or the elderly in some centres may have been too ill or handicapped to report needs in these categories.

For 83.5% of the group home was seen as of positive benefit to their health, but friends were not identified as part of the support system. This finding needs further study if support systems, including the use of appropriate technology, are to be developed to keep people in their own homes.

Health history

Over one third of the group reported that they had been admitted to the health care system for treatment. Because a medical diagnosis gives entry to the system and is often required for insurance purposes, it may have become all-embracing and misleading.

Overall, the elderly do not identify nursing as the major reason for admission into the health care system. People need to be aware of their medical diagnosis but also of their need for care, and they need to know about how to make their needs known to others, the kinds of services available to them and the implications of the use of such services. Only with a full understanding of their health condition can the elderly work with the nurse to achieve the desired goals. Further study of the relationship between the knowledge and the perceptions people have about their health is required if self-care and participation are to be obtained. Specifically, research is required on the ways in which people seek health services on the basis of their understanding of their own condition and their knowledge of what services are available.

For half of the group no life events had occurred that were seen as having significantly diminished their health. It may be that the elderly do not recognize or are unwilling to acknowledge the existence of such events, or do not relate life events to health, or have not understood the nurse's interest in those events. The latter possibility depends on the training of the nurse data collectors; the idea that life events may influence health may not be a firmly established concept among them.

Functional health status

This section of the health assessment form presented few missing observations and the profile of the sample appears similar to that reported in other studies on the elderly.

Sensory function appeared to have changed less than the functions of the major body systems. Variations in the function may be due to the validity of the measures used to assess its status or to the period of time under consideration, for the changes reported were for the period "immediately prior to admission" and no changes may have occurred during that time.

The most frequent changes in body function were in body movement, sleep/rest and ingestion/digestion, and most were accompanied by discomfort. Further study is needed of ways in which nursing interventions can

minimize discomfort in this group. Further study is also required concerning sexuality/reproduction, attention being paid to the difference in meaning between these two terms.

For over half of the functions pharmacological aids were used. The extent to which other aids than pharmacological ones have been used to assist the elderly to achieve body movement without discomfort as well as rest/sleep, etc. needs further examination. The elderly in fact used a considerable number of pharmacological, nutritional, mechanical and technical aids in relation to the bodily functions and they must be considered in resource planning. How the elderly use these aids, with or without technical assistance, requires further study.

For almost all of the functions precipitating events were noted. Further study is needed on how the nurse can assist the elderly, using their recognition of such events to develop prevention strategies.

Nursing care needs of the elderly

A total of 11 219 needs for nursing care was identified. The number decreased from 4.33 to 3.58 per person over the four-day period and the factors causing the decrease need to be examined in relation to severity of illness, diagnostic category and age.

Priority was given to breathing/respiration and circulation, as might be expected, since 76.4% were in hospital settings for many medical reasons, the most frequently reported of which were cardiovascular and respiratory disorders.

Relatively few needs were identified through the use of social and environmental data. This finding may be attributed to the predominance of physical care needs or to the nurse focusing on the individual and not on the environment.

Data sources

The kind of data sources used by the nurse appears to influence the content of the nursing care plan. In view of the need to computerize data and to improve the teaching of documentation, further study of the data sources is desirable. This is especially important since, as information from other disciplines becomes available, nurses will need to discriminate among the various sources.

Of the 24 categories of needs, skin care, hygiene and body movement ranked above other needs related to the diagnosis. These require further study as they may constitute core needs appropriate to other people within this age group. The high ranking of skin/hair/nails probably reflects an appropriate concern for skin care.

One need that all subjects were expected to express was biological rhythm; yet for three out of four days it was not identified at all. This raises the question of the understanding or meaning the nurse may have had of the term or of how the subject can express the need.

Further study is required of the psychomotor category — interdependence, housing, body movement, sleep and rest. It is possible that altering these needs may suggest alternative approaches to goal setting.

Further refinement of the health assessment form is needed, and particularly of the functional health status section. Its validity, utility and economy have been amply demonstrated in this study.

Nursing care objectives

Four out of 10 objectives were physical/physiological in nature, the range being from 7.5% to 83.5% in the centres (Fig. 15). The range for affective objectives showed a low of 0% for Centre 1 to a high of 39.7% for Centre 19. It is possible that the category "affective" held little meaning, though in the preliminary tests it did not appear so, or that the affective objective was included in other objectives. The possibility that the categories are not mutually exclusive is suggested.[6] Another possibility is that the nurse missed the feelings expressed.

Nursing care implementation

On average there were 2.2 planned interventions to every objective and 2.8 planned interventions for every need; and one out of every four interventions was carried out for the person. Further study of the interventions is required, with a control for age, disability, educational level, nationality and lifestyle.

If centres are compared a range of frequencies is seen in the category "action for", from 2.4% for Centre 17 to 66.6% for Centre 4. It is presumed that differences in the setting and sample are partly accountable for this disparity.

Although the literature stresses the predominant coordination role of the nurse, the frequencies of interventions do not strongly support this objective. The availability of appropriate services may determine whether or not coordination is possible.

Ninety-four per cent of the planned interventions were carried out and 5.9% were not. The nurse completed what she had set out to do and overplanning did not seem to occur. However, this category needs considerably more discrimination if it is to reflect exactly the important action category of the nursing care plan.

The large number of unplanned interventions carried out in the category "doing/action for" shows that even a single intervention per patient/client adds a considerable load to the care required for this elderly group. The nature of interventions and their frequency of occurrence should be examined at centre level, as considerable variation is noted from centre to centre (Fig. 16). The information obtained on interventions carried out could be useful in planning the nursing care hours required.

Evaluation

Seven out of 10 objectives were met, 3 out of 10 were not. The complexity or nature of the objectives in relation to the time available to meet them may account for these findings. Long-term or medium-term goals may not have

[6] A more detailed analysis can be found in Chapter 6 of the full report.

Fig. 15. Elderly group: categories of objectives for nursing care by centre (as a percentage) (N = 256-2129)

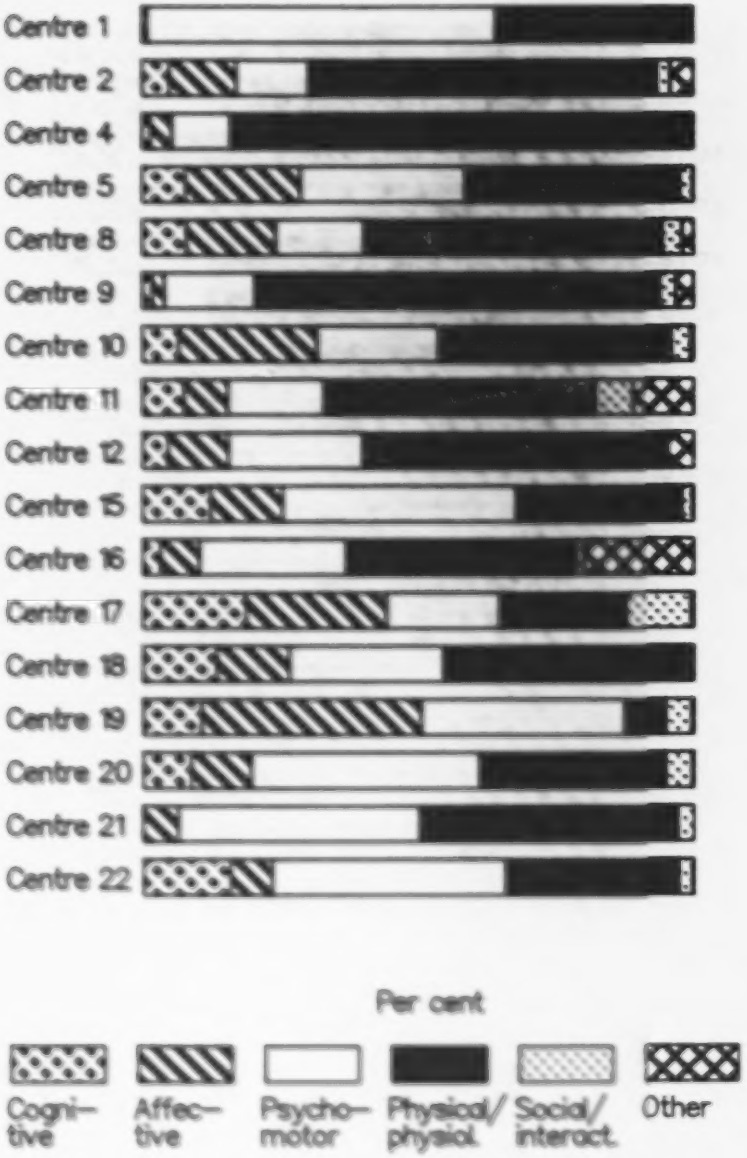
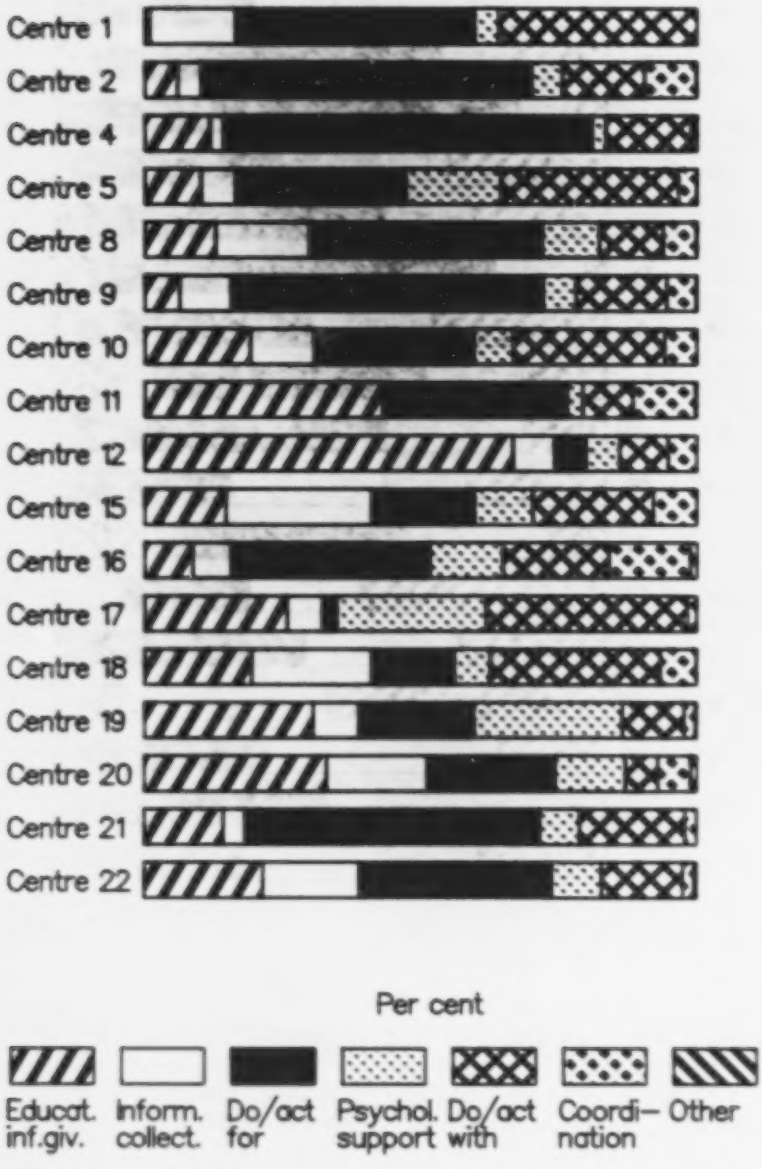


Fig. 16. Elderly group: categories of planned interventions by centre (as a percentage) (N = 329-5267)



been met in the time allocated for nursing care plans. The extent to which the nurse and the patient/client were at ease in evaluating the care may also have had an influence on the findings.

The Surgical Group

The final surgical sample consisted of 250 women and 197 men, 7 more than expected. That the number required was attained speaks well for the decisions made and the planning carried out within the centres.

Health assessment

Social and environmental data

For almost 6 out of 10 subjects religion or a belief system was important or very important, a finding that is contrary to the view that religion is diminishing in importance. The range for the categories "very important" and "important" was from 24.4% to 100%. Local and regional norms may be more relevant as a basis for planning care than the development trends noted in international psychological and development literature and should be the subject of study by nurses working with selected groups.

No major cultural or language differences were found to have had an effect on verbal communication between the nurse and patient.

The surgical group seemed well supported in that they were able to draw on a range of people, including parents, siblings, friends and neighbours. The degree of engagement in social activities seemed relatively low for this age group, an unexpected finding that may be related to the understanding of the term by the nurse, the patient or both.

Health history

For the surgical group the most frequently reported types of surgery were for the digestive and circulatory systems, malignant neoplasms and metabolic diseases. As expected, changes in body function and discomfort were related to the operations.

The diagnosis did not account for changes in emotion/feeling and sleep/rest needs. It is a necessary, but insufficient, indication for nursing care. It should not be used exclusively as an indicator of the nursing resources required.

In the category "life events that positively affect health", 13.2% recorded none. In the category "life events that diminish health", 17% reported an event that was not listed. Further study is required to determine the other factors not contained within those two categories.

As might be expected, the main concerns after discharge were the work situation (9.2% were unemployed), dependence on others and lifestyle.

Functional health status

The functional health status section of the health assessment form receives validation from the fact that the changes noted referred to changes in the digestive and circulatory systems, the most frequently reported surgical

diagnostic category. For the functions that changed most frequently discomfort and a precipitating event were noted. If patients are able to describe these changes and events, their ability to identify the care they require may be enhanced and their ability to take appropriate preventive action be supported when care is delayed.

For 11 of the 18 functional areas associated with the use of aids, pharmacological ones were those used most frequently. If people are to be involved in self-care after discharge, research on the learning and other aspects related to self-medication is needed to ensure the safety of the medicaments and their proper use in the home.

Nursing care needs of the surgical patients

As might be expected for day 1, the day before operation, emotion/feeling needs were those reported most frequently, this need corresponding to emotion/feeling function in the health assessment form. Need for adaptation, hygiene and sleep/rest were also frequently recorded and were probably related to emotion/feeling need in the surgical patients.

For days 2 and 3, as might be expected, hygiene, ingestion/digestion and circulation were in the top three positions. Sensory function ranked high, as would be expected for surgical patients. Further analysis of these findings is desirable.

Data sources

For the surgical group the nurse used a fairly large number of data sources, most often the health history section of the health assessment form. This was mainly because the diagnosis is included in that section. The nursing care plans were also used, as were the other two sections of the health assessment form.

What the nurse actually looked for, and when, are questions requiring study, in view of the trend towards computerizing nursing care planning data and the need to streamline educational programmes in nursing.

Nursing care objectives

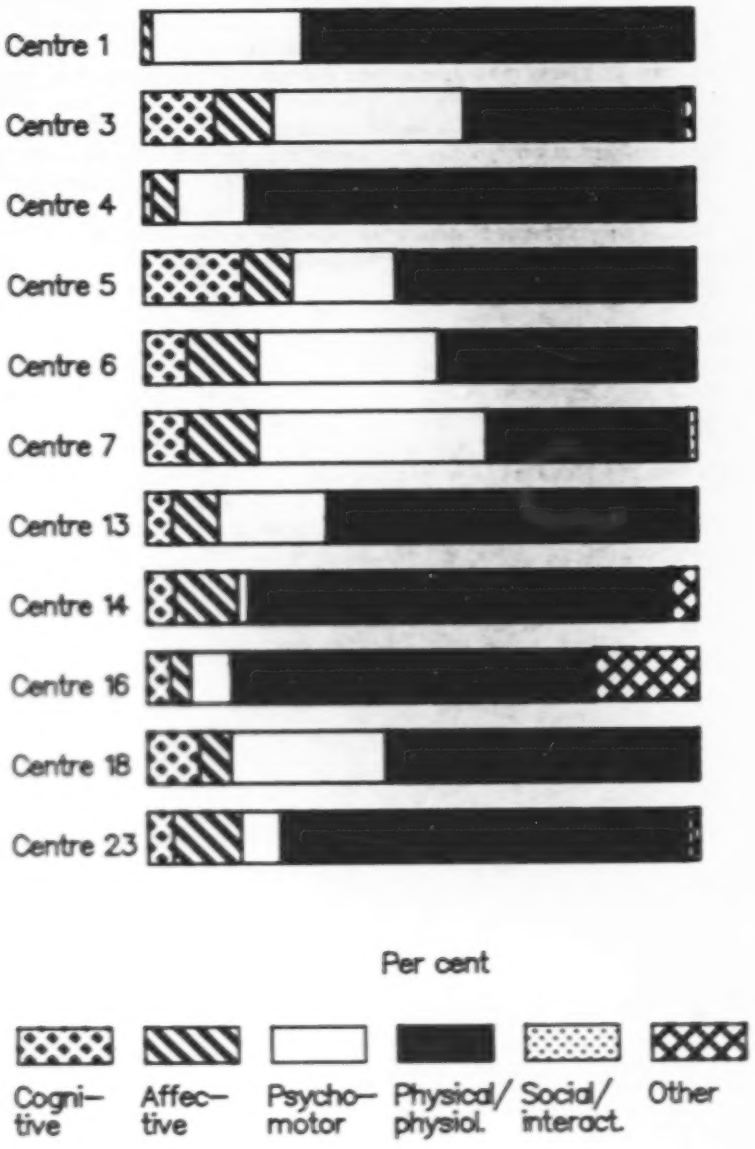
There were almost 20 nursing care objectives per patient, 6 out of 10 related to physical/physiological planning objectives and 1 out of 5 to psychomotor objectives. A comparison of the centres shows that, of the 8847 objectives, less than 10% fell into the categories "affective" and "social/interactive". The presence of affective objectives throughout all the categories of intervention shows that giving psychological support was only one of the ways by which affective needs were met (Fig. 17).

It must be recognized that the time and effort devoted to a given aspect of care are not necessarily in proportion to the number of objectives and interventions related directly to it. Also, an intervention may meet several objectives, including those concerning psychological needs.

Nursing care implementation

As expected, the nurse intervened *for* the patient most often, and carried out educational/information-giving interventions second. Although

Fig. 17. Surgical group: categories of objectives for nursing care by centre (as a percentage) (N = 439-1266)



emotion/feeling needs predominated on the nursing care plan before surgery, psychological support was placed fifth out of seven interventions. This finding must be interpreted with caution, for the nursing care plans might refer to a patient recovering from a surgical operation requiring a 15-day stay or from a relatively simple procedure requiring much less, and the severity of illness may have varied considerably, with resulting variations in the interventions.

On the day after surgery, "doing/acting for" ranked first, "information collection/observation" second. At centre level, the kind of interventions deemed appropriate must be considered in relation to the extent and kind of surgery and the severity of illness and disability experienced (Fig. 18).

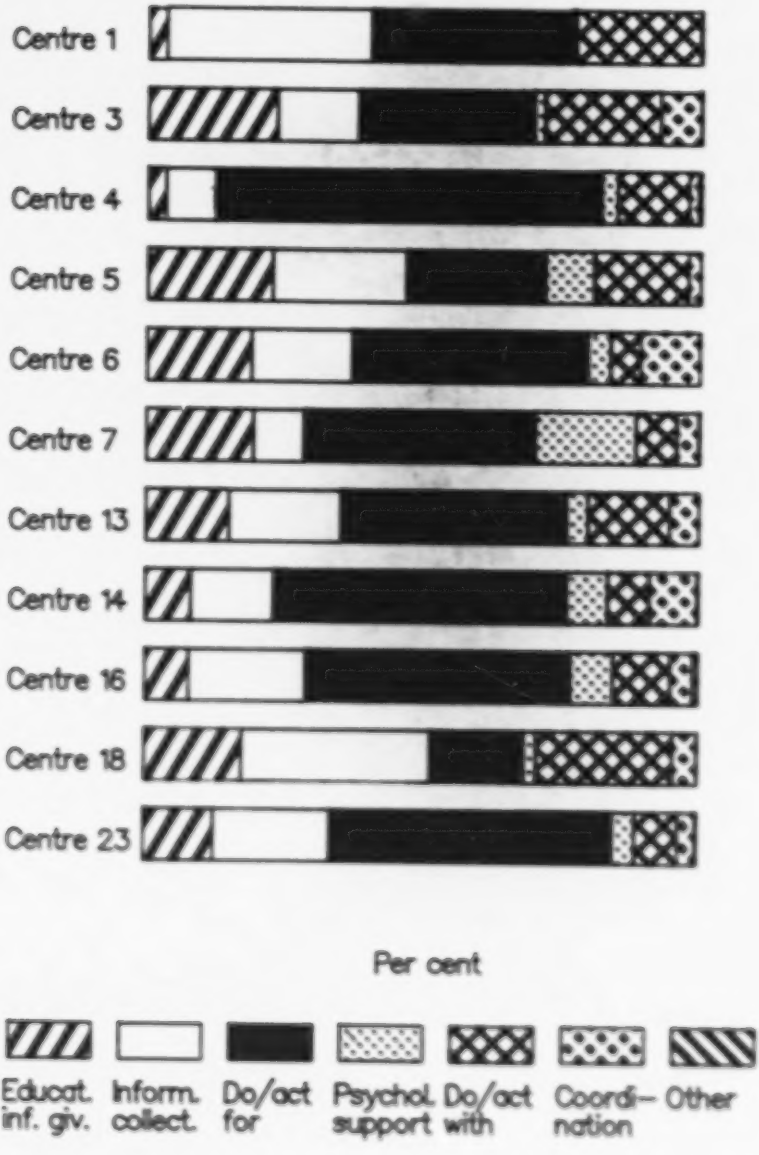
Most of the unplanned interventions also fell into the category "doing/acting for", but beyond this little can be said at the international level about those interventions.

Evaluation

Three out of four of the objectives were reported as totally met or exceeding expectations. Caution in interpreting this result is needed, as misleading findings are possible if patients who are not used to assessing the care they receive critically are asked by the care-giver to participate in a process of evaluation of which they have no experience.

Further study is required to increase the discriminative power of the evaluation, so that a more specific feedback is possible as a basis for meeting stated objectives.

Fig. 18. Surgical group: categories of interventions by centre (as a percentage) (N = 869-2725)



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Conclusions and recommendations

The conclusions of the study are based on the findings, analysis and interpretation of the data presented in the preceding chapters. They are presented as they relate to the WHO Fifth and Sixth General Programmes of Work, during which the study was developed and carried out, and to the study's aims, purposes and objectives. Comments are also made on the study's relevance to the Seventh General Programme of Work and the recently accepted European regional targets *(1)*. The conclusions related to the General Programmes of Work and the targets are based on visits to the centres, meetings held with centre personnel and prolonged discussion among the programme managers over the years of the study.

Fifth General Programme of Work

The objectives of the Fifth General Programme of Work were:

- the strengthening of health services
- the development of health manpower
- disease prevention and control
- the promotion of environmental health.

Strengthening of health services

The study demonstrates that nurses in Europe can engage in research work. The focus of the study was on the delivery of services with emphasis on direct participation of the patient/client and the use of a problem-solving approach to care. The ability of nurses to improve the care delivered has been amply shown for two major types of patient groups in Europe.

The WHO medium-term programme in nursing/midwifery made completion of the study possible. From inception of the study support and funds were provided, but with considerable restrictions. The importance of developing nursing as the major health service group has been emphasized in the medium-term programmes, but support on a much larger scale is needed if nursing programmes are to be initiated and nurses are to contribute effectively to health for all.

There is ample evidence from this study that educational benefits accrue from the use of an international network and the sharing of resources to promote continuing education programmes. The mechanisms, skills and experience that have been developed can also contribute to the development of additional data bases and information systems strengthening the health services in countries.

Eleven programme managers and their teams developed a framework for the study based on the person as a whole, caring processes, agreed definitions, cultural values and behavioural norms. Those involved have gained a richer understanding of the cultures in which the participating centres are located and of the nature and scope of nursing itself.

Development of health manpower

In the course of the study the critical thinking powers of the nursing personnel were put to the test. In the decision-making model chosen, the nursing process, the focus of care was on the needs of the person as a whole and the decisions required to meet those needs. Application of that approach should enable nurses to function more effectively to make the optimum use of resources to provide care.

The study has shown from its sample of elderly people in 23 centres in Europe that care of the elderly is complex and demands considerable nursing expertise, requiring knowledge of a great many conditions, a great many nursing care needs, the use of pharmacological agents and other aids, and ways of caring for persons suffering from discomfort in most functions. The group required care by nurses with a basic level of preparation in nursing and additional knowledge and skills in geriatric nursing care. Because of the complexity of nursing care required, the exclusive use of nursing auxiliaries or aides for this group is not appropriate.

To implement the study the skills of several kinds of personnel had to be developed — the programme managers, the contact persons, the data collectors and the coders. The conclusion can be drawn that in the European Region a cadre of nurses exists who are able to function adequately in their respective areas of nursing research, using the decision-making nursing process model.

Disease prevention and control

The focus of the study was the person in relation to his or her environment, therefore on the personal, psychosocial and environmental factors affecting current health status. For the surgical group the greater emphasis was on tertiary prevention, attention being paid to precipitating events, worries after discharge from hospital, and care immediately before and after operation. For the elderly sample, similar issues were important but all three levels of prevention were involved.

No direct assessment of the effects of preventive measures was made before or afterwards, but the nurse discussed with the patient the above factors, the effect of which cannot be measured directly. An informal feedback from the centres indicates a heightened awareness of the nursing

measures that can be used to implement concepts of prevention and control in a more active way.

Promotion of environmental health

Historically, the major emphasis in nursing throughout the world has been on individuals and the care required to assist them in what they cannot do for themselves. In the study, social and physical environmental data occupied an entire section of one of the two data collection forms, but it was used less than other sections. It may be concluded that, while environmental concepts form part of the framework of ideas nurses hold about nursing care, they do not as yet occupy a prominent position in their objectives and plans of care. The instruments used in the study were based on a holistic view of health that takes environmental factors into account. Whereas nurses were able to report on selected environmental factors, there is less evidence that they were able to record or carry out nursing interventions that demonstrated their ability to promote health on a broad scale encompassing the environment.

Sixth General Programme of Work

For the Sixth General Programme of Work two objectives were added to those of the Fifth General Programme of Work:

- the promotion and development of biomedical and health research; and
- programme development and support.

These two objectives can be seen as combined in national efforts to build up research centres with public and private support. The local and international courses, workshops and meetings to train personnel for the study were part of the efforts to meet those two objectives.

Owing to the number of languages required for the study, the translation of the basic research texts, nursing definitions, and other documents was a major obstacle. Had translations been made in advance, the timetable of the study might have been shortened. Because of the importance of the basic texts in furthering health research, they should be available in the major languages of the European Region.

If health care is to be carried out and researched in teams, nursing personnel should be familiar with the research process.

Seventh General Programme of Work

For the Seventh General Programme of Work the role of the WHO Regional Office for Europe was:

- to help make existing knowledge better known by identifying innovative and improved health care approaches in Member States
- to promote priority research

- to act as a catalyst in promoting national health policy development in accordance with the principles of health for all by the year 2000
- to improve cooperation and coordination between the international organizations active in the health field.

To help make existing knowledge better known by identifying innovative and improved health care approaches in Member States

The study has brought about considerable changes in nursing practice in the centres of the 11 countries involved and in those countries where information on the study was supplied through a second level of participating centres. An example is the dissemination of information about the nursing process through dozens of articles and books that have appeared in the nursing literature.

Through repeated definition and redefinition, a list of nurse-related terms was drawn up in 10 languages and is in common use in 23 centres. The terms, which were defined specifically for the purposes of the study, were not intended to be all-inclusive for nursing, nor are the definitions universally accepted. Examination of terms, concepts and constructs, and their relationship to the study framework and the data collection tools enabled agreement to be reached on the definitions. The nurses involved in the study now also understand the need to substitute quantitative for qualitative terms and so will be further able to contribute to future efforts to define and quantify the terminology required in research.

A WHO meeting was held during the development phase of the study on the sole subject of the use of documentation in nursing practice. Documentation is a basic requirement if quality assurance programmes are to be instituted to improve health care. Although two data collection tools, the health assessment form and the nursing care plan, were developed and used successfully, the practice of recording and transferring written material is reportedly not yet accepted as an integral part of clinical nursing practice in some settings.

To promote priority research

The study is a major effort to promote priority research, specifically for two important groups, the elderly and surgical patients.

A number of events, such as the acceptance of the European regional targets, show that because of the changing profile of the people of Europe, the care component of health will be expanded in the future. The care of the elderly is of particular concern to the European Region and to the world, as is shown by the regional and global support for the WHO Regional Office for Europe's programme on health of the elderly and the global programme on aging. The present study focuses on nursing practice in relation to the elderly as well as to surgical patients.

The major concern of the study, however, was the nature of nursing and the needs of people, with the implications the findings have for education, policy and resource allocation for nursing. The ground covered by the study can be considered to be a priority area for further study.

To act as a catalyst in promoting national health policy development in accordance with the principles of health for all by the year 2000

The key concepts of the strategy for achieving health for all by the year 2000 were adopted in the study, including the holistic view of the person, who carries responsibility for self-care, his or her participation in his or her care, the use of data to monitor nursing actions taken, and research as an integral element in the development of health care. Experience with these concepts during the study has provided the nurses involved with a frame of reference on which health strategies can be built and which can be used in meeting the targets outlined in the European regional strategy document.

The study, through its network of centres, has served as a catalyst, not only within nursing but also in relation to those in government who may not have previously realized what contributions nursing research can make to the planning and delivery of health care.

To improve cooperation and coordination between the international organizations active in the health field

A clear willingness of various international organizations to cooperate in research was demonstrated. Exchange of information about the medium-term programme and the study took place both within the European Region and outside. Aspects of the study have been presented at national and international congresses, and those who were involved in the study have been employed in various capacities.

European Regional Targets in Support of the Regional Strategy for Health for All

At the thirty-fourth session of the Regional Committee in 1984 the regional targets were approved by the Member States. An entire section of the target book relates directly to the delivery of care, the subject of the study. It calls for a rational distribution of resources based on need and systematic assessment of the quality of care, to which the decision-making process represents one approach.

The necessary groundwork for tackling major sections of the regional target book has been laid by this study; nurses who have been engaged in the three phases of the study are ready to meet the targets for health improvement. The study offers an approach whose political, operational and technical aspects formed part of a major research strategy.

The study stimulated small centres that might not have considered carrying out a large study on their own but did so by sharing expertise and resources, including that provided by the newly established Danish Institute for Health and Nursing Research. This expertise is an essential health care resource which, when used properly, can help to ensure a proper distribution of services and enable large groups of people to benefit.

The nursing research infrastructure created a basis for efforts to attain the target related to the rational and preferential distribution of resources, which states that: "By 1990, in all Member States, the infrastructures of the delivery systems should be organized so that resources are distributed

according to need, and that services ensure physical and economic accessibility and cultural acceptability to the population".

The study developed a method and the supporting procedures required to monitor the care given to two selected groups of patients. This is in line with the target stating that: "By 1990, all Member States should have built effective mechanisms for ensuring quality of patient care within their health care systems".

It has been demonstrated that nurses are able to collect health data, assist people in assessing their own health care, and develop a model or description of holistic man that carries implications for the full range of services that should be provided. This achievement is in line with the target stating that: "By 1990, the primary health care system of all Member States should provide a wide range of health-promotive, curative, rehabilitative and supportive services to meet the basic health needs of the population and give special attention to high-risk, vulnerable and underserved individuals and groups".

From the findings on the sample group of elderly persons, it is clear that for a variety of reasons the family and other social groups may not be available to assist in the development of a healthy lifestyle. Yet the regional target states that: "By 1990, all Member States should have specific programmes which enhance the major roles of the family and other social groups in developing and supporting healthy lifestyles". A considerable effort is required to develop these aspects of care for the elderly in the centres studied.

Ability to describe fully their state of health or health condition and awareness of the various social and environmental conditions that have an effect on health and of the kind of care that is required were not markedly shown by the subjects of the study. Most needs for services were put into the category of "medical care". The regional target, however, states that: "By 1990, educational programmes in all Member States should enhance the knowledge, motivation and skills of people to acquire and maintain health". The target document further notes ". . . the need for education of the public in the appropriate use of health services and the use of self-care". The study shows that people must learn to identify their own needs and distinguish between those that require self-care or lay care and those that require professional help. For such a change in behaviour they need to develop a vocabulary of communication to assist them in making their needs known to others. They also need to learn that medical care in the local health centre and the hospital is only one kind of care; nursing care is also available there and in the community. People can be helped to learn about the other kinds of groups and facilities available that could assist them in self-care.

Purpose of the Study

The overall purpose of the study was to identify and describe the needs of persons for nursing care and the objectives, nursing interventions and outcomes related to those needs, and to establish a data base for the two sample groups. To meet this purpose two designated groups were studied

within a designated time period using uniform instruments for data recording and collecting. This descriptive study approach was shown to be a worthwhile way of identifying and describing the needs of persons for nursing care and quantifying for data processing the needs, objectives, nursing interventions and outcomes of the interventions.

In the 23 European centres the nursing process was shown to be an effective way of documenting nursing care and decision-making in nursing.

Aims of the Study

The study had four aims:

- to develop research ability among nurses to support nursing within countries
- to increase knowledge about the nursing care needs of selected groups of patients, the care planned to meet those needs and the outcomes of the care given
- to develop a network of centres to achieve the above aims and to encourage communication within and among Member States on nursing care practices and research and related educational activities
- to promote the development of nursing as a discipline within European countries through application of the nursing process.

To develop research ability among nurses to support nursing within countries

Apart from its gains — an international network of centres, a cadre of nurse researchers, published articles, a common understanding about nursing research, familiarity with data processing and creation of a European centre for nursing research — the study shows that similar studies can be conducted on a smaller scale and will achieve increased knowledge and expertise within countries.

Owing to the creation of a comprehensive data cleaning program and procedures for the submission of data designed specifically for and with the 11 national data centres, the transfer of large amounts of data was highly successful. It should serve as a model facilitating future exchanges among researchers within and between countries.

To increase knowledge about the nursing care needs of selected groups of patients, the care planned to meet those needs and the outcomes of the care given

The use of a comprehensive health assessment instrument has sensitized nurses to a variety of factors not usually seen as affecting nursing care, such as problems after discharge, perceptions of reasons for admission to the health care system and the importance of religion/belief systems. Acknowledgement that nurses are involved in the personal lives of patients/clients has resulted in a greater appreciation of the need for interaction between the nurse and the person, as a way to initiate and support preventive health care.

To develop a network of centres to achieve the above aims and to encourage communication within and among Member States on nursing care practices and research and related educational activities

Informal reports have indicated considerable interest and requests for inclusion in the network.[a] Those centres that meet the full WHO criteria have been designated for future work with WHO.

To promote the development of nursing as a discipline within European countries through application of the nursing process

The study itself, involving as it did large group meetings and other kinds of intercountry collaboration, has contributed positively to the development of professional nursing in Member States. As a result of the study, centres in Member States have begun to change the task-oriented approach of nursing practice to one based on the use of scientific principles.

Objectives

The four objectives of the study were:

(*a*) *assessment*:

- to identify and describe the needs for nursing care of two designated study groups within a designated time period
- to identify the order of priority the nurse gives to those needs for action
- to establish the frequency with which similar categories of needs for nursing care occur;

(*b*) *planning*:

- to establish objective(s) for meeting identified needs
- to describe the nursing interventions planned to meet the stated objectives
- to describe the frequency with which similar categories of objectives occur;

(*c*) *implementation*:

- to describe the nursing interventions undertaken to meet identified needs for nursing care
- to describe the frequency with which similar categories of nursing interventions are undertaken in response to similar selected categories of identified needs;

[a] This interest served in part to stimulate the creation of a European nursing/midwifery newsletter, currently available in four languages.

(*d*) *evaluation*:

— to describe the outcomes of nursing interventions

— to identify the relationship of these outcomes to the stated objectives

— to develop a nursing practice data base for defined groups of persons, using uniform instruments for data recording and collecting.

Assessment

To identify and describe the needs for nursing care of two designated study groups within a designated time period

Through the use of a structured health assessment protocol, needs more varied than those of a physical nature only can be identified. Nursing care needs, the priority the nurse gives to those needs and the frequencies with which similar categories of needs occur can be identified and described, at least for the two groups of patients/clients sampled.

Throughout the study person-centred rather than task-centred care was accepted as the way nursing should be carried out in the 23 centres.

Although mention is often made of the need for the self-reporting of factors affecting health, the study has demonstrated that reporting agreed upon between the nurse and the person is a viable and productive way of assessing health status and carrying out care.

The study provided for considerable flexibility in sample selection at the national level. Raw data are available in the participating centres for the identification and analysis of the differences due to sociocultural variations, including language.

To identify the order of priority the nurse gives to those needs for action

The study demonstrated that not only is it possible to identify a list of nursing care needs for selected groups of patients/clients, it is also possible to identify the priority the nurse gives for action. Analysis is required in the centres of the priority decisions for subjects presenting selected medical diagnoses or clusters of needs.

Although a need may frequently appear in the list prepared by the nurse, it does not necessarily mean that it constitutes a priority need. In other words, an oft-occurring need is not the same as a priority need.

To establish the frequency with which similar categories of needs for nursing care occur

Since very few observations were missing on the health assessment form and since extensive trials were carried out in developing it, it may be concluded that the categories identified are sufficiently comprehensive to permit a statement of the frequency with which similar categories of nursing care occur.

Further refinement of some of the need categories is required, such as sexuality/reproduction and biological rhythm.

Planning

To establish objective(s) for meeting identified needs

Written objectives of care for the patients/clients in two sample groups can be established through the use of a standard nursing care plan and the objectives can be coded and computerized for analysis. Three preliminary tests enabled the nursing care plan, a standard protocol that provides for the recording of three objectives per need, to be developed. The nursing care plan covers most or all of the expected objectives for patients/clients in similar cultural settings and under similar conditions.

Very few objectives appeared in the category "other". This suggests that a sufficient range of choices of objective was available so that the category "other" was not required. However, a further analysis of the objectives is required, to provide a more precise basis for the evaluation of care.

The nursing care plan has been shown to be widely applicable for describing planned nursing interventions in the centres involved in the study.

Throughout the study the value and importance of precise recording of nursing interventions have been demonstrated; it is an essential element in the planning and evaluation of nursing care. Refinement of the intervention categories is required in order to link them more specifically with the conceptual framework.

To describe the nursing interventions planned to meet the stated objectives

Planned interventions can be recorded in writing and coded and computerized by means of the standard nursing care plan.

The preliminary tests of the nursing care plan showed that nearly 90% of objectives had three or fewer planned interventions per objective (the maximum was four objectives) and that the category "other" was used very infrequently, an indication that the categories were inclusive. However, refinement of the categories for more precisely defined samples is required if resource allocation estimates are to be made.

Further study is required of cross-cultural differences in the ways nurses care for patients/clients with similar demographic characteristics and health conditions who can participate in the completion of the same or similar standard protocols.

Implementation

To describe the nursing interventions undertaken to meet identified needs for nursing care

The nursing interventions undertaken (planned or unplanned) can be described and coded for computer analysis. The categories need further study to enable relationships between planning and resource allocation to be investigated and the data to be subjected to statistical analysis.

To describe the frequency with which similar categories of nursing interventions are undertaken in response to similar selected categories of identified needs

Interventions planned by identified need can be classified, ranked and coded. The interventions identified appeared to be appropriate for both

groups given the age, the diagnosis on admission and the reasons recorded for surgery. The needs identified, as expected, enhance the validity of the nursing care plan as they were consistent with the diagosis on admission.

Evaluation

To describe the outcomes of nursing interventions

The standard nursing care plan makes it possible to describe outcomes of nursing interventions that can be coded and computerized for analysis.

The scores achieved in the evaluation section of the nursing care plan during the training phase indicated that further preparation of nurses is required, particularly to assist them to relate outcomes to objectives and needs.

Further work is needed to improve the specificity and objectivity of the evaluation criteria. Specific ways in which evaluation in which patients/clients participate can be further quantified are required. Further analysis at centre level is needed to examine the appropriateness and timeliness of the interventions of the nurse.

* * *

Because of the proliferation of literature on the nursing process in Europe since the inception of the study, no further production of materials on the nursing process by WHO seems to be warranted.

The strict time limits adhered to for collection of the data and for the other deadlines of the study resulted in the development of an appreciation of the need for timely and accurate recording, coding and transfer of the data.

The high completion rate for both instruments was partly attributable to a number of measures that were taken:

— data collectors and coders received consistent instruction by the same person;

— one person at the country level was responsible for the coordination of the work of the centres, including the interpretation of procedures and guidelines;

— the contact person shared the same educational, cultural, language and professional background as the data collectors, coders and national systems analysts;

— explicit instructions were written on the data collection instruments after they had undergone three preliminary tests.

The educational efforts undertaken resulted in widespread acceptance of the use of the decision-making model in nursing. This is evident from the

participation of the following people in the preparation for the study and in the elaboration of the model:

- teachers of nursing in the nursing schools through special courses;
- nurses in postbasic specialized study institutes;
- nurse administrators in postbasic institutes specialized in the organization, management and control of nursing;
- students of teaching in the academic nursing educational programmes;
- students in the basic schools of nursing.

Modification of the data collection instruments is required if they are to be used in daily practice. Instruments for use in nursing records must be relatively shorter than the health assessment form.

Now that a holistic view of the person and a more clearly specified enumeration of needs are accepted, the expectations of nurses require further analysis. As behavioural research becomes integrated into the biological sciences, the care required, given present staffing levels, may far exceed any one nurse's capacity. Consideration of this issue is sorely needed.

The provision of nursing care requires a system of reporting. At present the system uses the medical diagnosis but is distinct from it. While the medical record may be helpful in the care of the person, it furnishes only part of the information essential to nursing care planning.

Recommendations

Programmes of work

To strengthen the health services, nurses should have the major responsibility for decisions about patient care and be held accountable for implementing the nursing process. In this way ongoing evaluation and upgrading of care can be achieved. If nurses are to assume this responsibility they must have support on a broader scale locally, regionally and nationally than has hitherto been provided.

It is recommended, on the basis of the experience gained in the study, that all available informational sources be opened to nurses, including medical libraries and computerized retrieval systems. It is further recommended that nurses be instructed in the creation and use of data bases and health information systems.

The study has shown that nursing care is different from medical care and that the work carried out by the nurse is based on needs identified by the patient/client and nurse. Standards of practice should be developed for nursing by nursing bodies using the study's decision-making model and boards of nursing should be established in countries to support the maintenance of standards.

The nursing personnel recruited to care for the elderly should receive specific preparation in the aging process and the psychosocial aspects of caring for the elderly, and group and individual learning opportunities to assist them in dealing with aging and dying. Such preparation in geriatric

health care could be carried out in what Mohide et al. call teaching units in long-term care *(2)*.

Nurses trained in developmental psychology, geriatric nursing or anthropology should receive support for the study of cross-cultural nursing care in order to identify common elements of value.

The family physician or community health nurse should explain to patients before admission to hospital what they must do to prevent post-operative complications. The study has shown that people are eager to share with the nurse their perceptions of their health situation and that nurses use the information they provide in planning care.

Great efforts should be made to "focus nursing to the needs of populations through practice with individuals" *(3)*. In teaching and continuing education programmes emphasis should be placed on the effects of the environment on health, particularly the health of those requiring support services. The way the nurse can manipulate the environment might include "attempts to control spread of infection in hospitals, to create a therapeutic milieu in mental hospitals, to decrease hazards in homes and workplaces or to influence health policies in the community" *(3)*.

The study examined assessment and planning to meet specific needs for nursing care. Clearly caring is complex and labour-intensive, even when the psychological and social/interactive aspects are not given as much attention as might be desired. If the approach to health care is to be improved, the care required by specifically defined groups must be examined further. Priority research in nursing as it relates to care should be carried out with regional, national and international resources pooled and documentation translated before the initiation of any new activity.

The nursing process should become a core component of basic nursing programmes and of learning for nursing in clinical practice.

In future studies to prevent delay provision should be made for nurses to have access to the literature required in their own language, and funds should be made available for translation from the outset of the studies.

A similar approach using modified versions of the tools developed and better defined samples could be employed within countries for the study of the nursing care needs of those with particular health conditions or social characteristics.

Nurses in the European countries not involved in the study would benefit from being included in the network. They could thus contribute to a greater extent to their own country's efforts to improve care.

An information system documenting nursing care should be created in all health care facilities used by nurses in collaboration with their patients/clients. This would ensure participation of the consumer in his or her care and provide a basis for sorely needed retrospective studies and the introduction of nursing audits. The list of nursing terms in the 10 languages should be made available to nursing personnel in countries as a basis for further development and refinement of the terms.

Concrete measures should be taken to structure the working time of nurses so that they can implement teaching programmes in a planned manner. Part of their work should involve the completion of a nursing

assessment as a basis for planning nursing care. Nurses should discuss the plan of care with patients/clients to obtain their full contribution.

The basic nursing terminology developed in the study should be refined and added to so that a data base of terms can be made available in English, then in the other European languages.

Throughout the study considerable efforts and resources went to develop researchers who could participate in studies and ultimately serve as principal investigators. A small cadre of nurse scientists should be developed and a planned progamme instituted to ensure their ability to act as consultants in their own and other countries in the European network.

The use of current research findings is essential for innovative and improved health care approaches to nursing practice. The study has shown that nurses can and will be involved in research if the opportunity is open to them. The preparation of nurses as research workers and users should be instituted at the basic educational level, and nursing practice based on research should be expected of practising nurses.

European regional targets

The results of the study should serve as a basis for discussion in relation to the European regional targets. Several elements developed in the study serve as examples of ways in which attempts to meet some of the targets can be made.

A mechanism should be established to ensure that practitioners receive the results of recent research findings so that new knowledge can be applied effectively. National clearing-houses should be established within regional research centres or collaborating centres to review and disseminate research findings from many disciplines in concise form to front-line workers. Examples are the research findings and other health news provided through the WHO newsletter *Nursing/midwifery in Europe*. Such action would in part address the target which states: "Before 1990, all Member States should have formulated research strategies to stimulate investigations which improve the application and expansion of knowledge needed to support their health for all developments".

A variety of methods should be developed to help people learn about their health and health conditions, both before operations and upon discharge from hospital. Such methods might include cost-saving approaches such as videotapes, discharge audiotapes and telephone hot lines to the hospital nurses who had recently administered care.

If the European targets are to be realized, nursing care objectives will have to reflect a more balanced caring programme. Model health care programmes should be developed from which nursing objectives can be derived to serve as examples of care for selected patients.

The way administrators and nurses approach care must be based on planning for people and current staffing patterns will require considerable changes. Nurses should be assigned to a person, not to a disease, a room, a doctor or a list of tasks. Approaches such as patient assignments, team nursing or primary care nursing assignments place emphasis on those requiring nursing care and are appropriate methods for attaining patient-centred objectives.

Job descriptions for nurses should include the responsibility of the nurse for the documentation on patients/clients, and other health workers, including physicians, should understand and respect that responsibility.

To understand fully the changing needs of populations, nurses in all settings should receive periodic briefings from nurse specialists, epidemiologists and other public health specialists. Such briefings should include health trends, environmental factors affecting local populations, recent changes in legislation, recent research findings and follow-up findings on patients discharged from inpatient settings.

Hospital and community nurses using the nursing care plan as a basis for care should hold meetings to evaluate the effectiveness of the care delivered. Home visits by hospital nurses and hospital visits by community nurses would be one way of using expertise effectively.

Documentation is of crucial importance in nursing and physicians and others should be briefed on its nature, scope and purposes.

Physicians and others should expect to see changes in the way nurses, in their teaching/counselling role, carry out their responsibilities. For example, they should expect to see nurses sitting with people, talking with their families, contacting others for help and consultation, developing teaching packages and videotapes and holding inservice workshops for housekeeping personnel.

Studies based on nursing care requirements should serve as a major factor in health policy decisions concerning the allocation of nursing personnel and other resources.

Within Europe, steps should be taken to secure an infrastructure for nursing research so that successive research efforts do not require prohibitive starting costs. Countries with research organizations or institutes should serve as bases for networks of regional centres and encourage other countries to join and benefit from the experience gained and the resources available.

Consideration should be given in each country or internationally to the establishment of nursing research foundations to ensure that funds for nursing research are available.

The report on the study should be translated into the other languages so that nursing students and practising nurses can benefit from the work of their colleagues.

The model health care approach for the care of people with common needs for nursing care or common conditions should be developed on the basis of the knowledge gained during the study.

Nurses who are involved in research should learn the basic principles and concepts of epidemiology. The study of populations and other related concepts will strengthen the basis on which research studies are undertaken.

The conceptual framework developed in the study and the approaches employing it should be made widely known to encourage local discussion on planning, objective-setting, implementation and evaluation.

Studies should be carried out on the characteristics of elderly people that best lend themselves to the use of social networks and programmes enhancing the problem-solving skills and capabilities of the family and the extended social networks.

Considerable support for nursing research has resulted from the study, which has established that the content of nursing practice itself constitutes a central focus for nursing in clinical practice. Future studies should be implemented on a smaller geographical scale than was employed in the study in order to keep costs reasonable.

The working methods, procedures and tools developed in the study should be disseminated to other regions of the world, particularly those which could benefit from the translated study documents.

Aims

The teaching of research skills should be included in nursing education curricula at all levels. Nurse teachers should be involved in research themselves and should be expected to use research methods in their teaching. They can create research-mindedness only if they themselves are familiar with key concepts, processes and results in nursing research. The use of research findings in nursing practice is the responsibility of the nurse. Leaders in nursing education and nursing practice should assist students to develop research and use the findings to improve nursing practice.

The data-processing procedures of the study should be published, to serve as a stimulus to and model for the use of computerized tools for nursing care management.

The standard list of nursing definitions and the nursing terms developed in the study should be used as the basis for developing standards of practice. This will help efforts to develop nursing as a discipline and increase the chances for the reciprocity of nurses in the European Region.

The network of nursing research centres should be kept active and assist new nurse researchers in their attempts to improve care through research. Special attention should be given to those European countries which have not been able to establish the research component as an integral part of nursing. Collaborating centres should aim at integrating further findings on the study into their practice.

Nursing education should be based on nursing concepts and nursing knowledge involving logical thinking and person-centred care, and nurse–person interaction in the total care of people should also receive attention in basic and continuing education programmes.

Further analysis should be carried out of the steps of the nursing process, in order to identify relationships among the steps.

The nursing process approach should be extended to other areas of the European Region, using the expertise of the personnel involved in the study.

Objectives

Continued efforts should be made to refine the health assessment form and reduce its length, to make it more manageable in clinical nursing. It should also be subjected to content analysis, to refine the holistic concept and the extent to which current health status is reflected in it. Reorientation from task-centred to person-centred care was made in the study. The recently accepted European regional targets endorse the holistic view. Government support should be given to pilot studies, research and demonstration projects

based on that view, rather than on the view that nursing is a physician-supporting or task-centred activity.

Concerted efforts should be made to apply the health assessment form in clinical settings in which nursing care needs are similar or different, for example in maternal and child health nursing.

The nursing care plan should be evaluated to assess the extent to which it accurately reflects assessment, planning, implementation and evaluation in nursing.

Further studies should be carried out on the raw data to assess the ways in which nurses understand patient needs, how they describe those needs and what the relationship is between needs and the sociocultural background.

In the study it was not possible to assess and systematically modify nursing practice skills, owing to the negative reactions of some of the centres. In future studies the basic knowledge and expertise of nurses should be established quantitatively to eliminate a source of variation of crucial importance.

Further work is required to examine more closely how nurses validate the data they record and to isolate a core group of data as a base for all health assessment interviews.

Further studies should be carried out on the ways in which nurses establish priorities of care, taking into account such factors as the setting, the influence of insurance, staffing patterns, types of service and patterns of authority and control. This is required if opportunities are to be afforded for counselling, teaching and the development of self-help skills within the constraints of the time allocated to care.

Studies should be carried out, using the nursing care plan as a basis, for determining the staffing levels and time required to care for selected groups of people. More accurate predictions or projections of staffing patterns and cost–benefit studies could be carried out. Schools of nursing should teach documentation skills based on interaction and observation.

The categories of intervention objectives referring to planning objectives should be analysed further, to examine the components of the major categories identified. This element of the nursing process is of crucial importance in the evaluation of care and must be examined more closely.

Studies should be carried out to examine the ways in which nursing interventions affect the long-term and short-term outcome of patient care, to categorize outcomes more precisely and to examine the time required to carry out expected interventions for selected groups and calculate their cost.

Studies should also examine alternative approaches to interventions in the light of the role and value of the support systems available.

The study of nursing interventions should include the measurement of patient satisfaction and the perceived effectiveness of care as well as objective measurement of improvement.

The evaluation component of the nursing care plan should be strengthened by increasing its specificity and objectivity.

★ ★ ★

The results of the study indicate areas where nursing in Europe in general should be strengthened through changes in perception, practice and education, and acceptance of nursing as a discipline with a scientific base.

Involvement in research can be stressful and time-consuming, and so it was for the nurses and their colleagues who devoted numerous hours to the many drafts of documents. If health care in Europe is to achieve the levels targeted, in order to carry out the work planned nurses must be given release time with replacement personnel.

Written care plans should be completed on all patients/clients admitted to the health care system, and revised and upgraded continuously in order to provide the basis for an information system, nursing audits and retroactive studies.

Nursing personnel other than nurses who work with patients/clients and their families should be acquainted with the decision-making model used and their assistance and involvement should be sought in developing plans for care. The part they play in implementing care is of crucial importance and their advice and support are necessary for success.

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